

**UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF MASSACHUSETTS**

Ocean Semiconductor LLC,

Plaintiff

v.

Infineon Technologies AG and Infineon  
Technologies Americas Corp. (“Infineon”),

Defendant.

Civil Action No.:

JURY TRIAL DEMANDED

PATENT CASE

**COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Ocean Semiconductor LLC (“Ocean Semiconductor” or “Plaintiff”) files this Complaint against Infineon Technologies AG and Infineon Technologies Americas Corp. (collectively “Infineon” or “Defendants”), seeking damages and other relief for patent infringement, and alleges with knowledge to its own acts, and on information and belief as to other matters, as follows:

**NATURE OF THE ACTION**

1. This is an action for patent infringement arising under the Patent Laws of the United States, 35 U.S.C. § 1 *et seq.*

**THE PARTIES**

2. Plaintiff Ocean Semiconductor is a limited liability company organized and existing under the laws of the State of Delaware, and its registered agent for service of process in Delaware is Rita Carnevale, 717 N. Union Street, Wilmington, DE 19805.

3. On information and belief, Infineon Technologies AG is a corporation formed under the laws of the Federal Republic of Germany with a principal place of business at Am Campeon 1-15, 85579, Neubiberg, Germany.

4. On information and belief, Infineon Technologies Americas Corp. is a Delaware corporation with a principal place of business at 35 New England Business Center Drive, Andover, MA 01810 and at 205 Crawford Street, Leominster, MA 01453. On information and belief, Defendants may be served through its registered agent, Corporation Service Company at 84 State St., Boston, MA 02109.

5. On information and belief, Defendant Infineon sells, offers to sell, and/or uses products and services throughout the United States, including in this judicial District, and introduces infringing products and services into the stream of commerce knowing that they would be sold and/or used in this judicial District and elsewhere in the United States.

6. Plaintiff Ocean Semiconductor is the assignee and owner of the patents at issue in this action: U.S. Patents Nos. 6,660,651, 6,907,305, 6,725,402, 6,968,248, 6,420,097, 7,080,330, 6,836,691, and 8,676,538 (collectively, the “Asserted Patents”). Ocean Semiconductor holds all substantial rights, title, and interest in the Asserted Patents, including the exclusive right to sue Infineon for infringement and recover damages, including damages for past infringement.

7. Plaintiff Ocean Semiconductor seeks monetary damages and prejudgment interest for Defendants’ past and ongoing direct and indirect infringement of the Asserted Patents.

8. Each Defendant, Infineon Technologies AG and Infineon Technologies Americas Corp. (“Infineon”), is a semiconductor company that designs, develops, sells, offers to sell, and imports into the United States semiconductor products in the communications, internet of things, automotive, computer, and consumer electronics industry.

9. Defendant Infineon, which has its own R&D and production centers in the United States (including facilities in Leominster, MA and Andover, MA), produces or contracts with third-party semiconductor fabricators or foundries (“Infineon Foundry Partners”) that own, operate, or control semiconductor fabrication plants (“fabs”) within and/or outside of the United States (“International Facilities”) to produce the Accused Products. One such Infineon Foundry Partner is United Microelectronics Corp. (“UMC”). UMC has a contractual partnership with Infineon to design, develop, or manufacture semiconductor products including integrated circuits for Infineon. (*See, e.g.*, “Infineon and UMC Announce Manufacturing Agreement for Automotive Applications,” *available at* <https://www.infineon.com/cms/en/about-infineon/press/market-news/2014/INFATV201412-018.html> (last visited Oct. 12, 2020); *see also* “Taiwan’s UMC to scale down chip project with Chinese partner,” *available at* <https://asia.nikkei.com/Economy/Trade-war/Exclusive-Taiwan-s-UMC-to-scale-down-chip-project-with-Chinese-partner> (last accessed October 12, 2020)). Another such Infineon Foundry Partner is Taiwan Semiconductor Manufacturing Company Ltd. (“TSMC”). (*See, e.g.*, “Infineon and TSMC Extend Technology and Production Partnership Agreement; Will Jointly Develop 65nm Embedded Flash Process Technology For Automotive and Chip Card Applications,” *available at* <https://www.infineon.com/cms/en/about-infineon/press/press-releases/2009/INFXX200911-005.html> (last accessed October 12, 2020)). Both UMC and/or TSMC have a contractual partnership with Infineon to design, develop, or manufacture semiconductor products including integrated circuits for Infineon.

10. On information and belief, Defendant Infineon (directly or through one or more of its Foundry Partners such as UMC and/or TSMC) has a contractual relationship with Applied Materials, Inc. (“Applied Materials”) (*see, e.g.* UMC’s YY Chen video, *available at*:

<https://www.appliedmaterials.com/automation-software> (last accessed October 12, 2020); *see also* Applied Materials' job posting for "TSMC F15 E3 project," *available at* [http://www.mse.ntu.edu.tw/attachments/article/154/AMT\\_Summer%20Student%20Program\\_Job%20Post\\_2013.pdf](http://www.mse.ntu.edu.tw/attachments/article/154/AMT_Summer%20Student%20Program_Job%20Post_2013.pdf) (last accessed October 12, 2020)) and PDF Solutions Inc. ("PDF Solutions") (e.g., "Taiwan Semiconductor Manufacturing Company adopts PDF Solutions yield improvement technology," *available at* <https://www.edn.com/taiwan-semiconductor-manufacturing-company-adopts-pdf-solutions-yield-improvement-technology/> (last accessed Oct. 12, 2020)); *see also* "Exensio: Big Data in the Fab," *available at* <https://semiwiki.com/eda/4351-exensio-big-data-in-the-fab/> (last accessed Oct. 12, 2020)), and one or more of the Infineon Foundry Partners (e.g., UMC and/or TSMC) employ Applied Materials' semiconductor fabrication or manufacturing equipment, platforms, and/or framework, including Applied Materials' E3 system, including the E3 factory advanced/automation process control ("APC") platform hardware and/or software (collectively, "E3 system"), PDF Solutions' Exensio hardware and/or software (collectively, "Exensio system"), and/or other in-house or third-party advanced/automation process control system and platform hardware and/or software (e.g., with similar technical and functional features) to design, develop, and/or manufacture Defendant Infineon's semiconductor devices, including integrated circuits.

11. Upon information and belief, UMC and/or TSMC employ(s) Applied Materials' and PDF Solutions' semiconductor fabrication or manufacturing equipment, platforms, and/or framework (e.g., Applied Materials' E3 system and/or PDF Solutions' Exensio system) at their manufacturing facilities. *See, e.g.* LinkedIn profile for Tan Chun Sin, Thin Film Senior Principal Equipment Engineering at UMC, *available at* <https://www.linkedin.com/in/tanchunsin/?originalSubdomain=sg%20+%20Infineon%20as%20a>

[%20key%20UMC%20customer:%20https://asia.nikkei.com/Economy/Trade-war/Exclusive-Taiwan-s-UMC-to-scale-down-chip-project-with-Chinese-partner](https://asia.nikkei.com/Economy/Trade-war/Exclusive-Taiwan-s-UMC-to-scale-down-chip-project-with-Chinese-partner) (last accessed October 12, 2020). Applied Materials has received awards from UMC. *See, e.g.*, [https://www.appliedmaterials.com/files/nanochip-journals/nanochip\\_v7\\_iss2\\_112912.pdf](https://www.appliedmaterials.com/files/nanochip-journals/nanochip_v7_iss2_112912.pdf) (last accessed October 12, 2020); *see also* <https://www.appliedmaterials.com/nanochip/nanochip-technology-journal/july-2014> (last visited October 12, 2020); *see also* <https://www.appliedmaterials.com/files/nanochip-journals/nanochip-fab-solutions-12-2014-revised.pdf> (last accessed October 12, 2020). Applied Materials also has received supplier awards and recognition from TSMC. *See, e.g.*, “TSMC Recognizes Outstanding Suppliers at Supply Chain Management Forum,” *available at* <https://pr.tsmc.com/english/news/1873> (last accessed October 12, 2020).

12. On information and belief, Defendant Infineon also has a contractual relationship with Applied Materials and employs Applied Materials’ semiconductor fabrication or manufacturing equipment, platforms, and/or framework (e.g. Applied Materials’ E3) at Infineon’s own manufacturing facilities. *See, e.g.*, Infineon’s Michael Förster video, *available at* <https://www.appliedmaterials.com/files/videos/converted/APG-Infineon-Tech-Video.mp4> (last accessed October 12, 2020).

13. On information and belief, Defendant Infineon (directly or through its Infineon Foundry Partners such as UMC and/or TSMC) employs Applied Materials’ E3 system and/or PDF Solutions’ Exensio system to develop or manufacture one or more systems, products, and/or devices for importation into the United States for use, sale, and/or offer for sale in this District and throughout the United States, including, but not limited to, semiconductor products and devices, such as MOSFET products (e.g. 20V-40V N-Channel Automotive MOSFET, 55V-60V

N-Channel Automotive MOSFET, 75V-100V N-Channel Automotive MOSFET, 120V-300V N-Channel Automotive MOSFET, 600V-800V N-Channel Automotive MOSFET, 20V-150V P-Channel Automotive MOSFET, 30V-55V Dual N and P-Channel Automotive MOSFET, 950V CoolMOSa P7 SJ Power Device, 600V CoolMOS CFD7 Power Transistor, 600V CoolMOS C7 Power Transistor, OptiMOSTM 2 + OptiMOSTMP 2 Small Signal Transistor, and similar CoolMOS and OptiMOS devices), IGBT products (e.g., TRENCHSTOP IGBT 7, TRENCHSTOP 5 Advanced Isolation), gate driver products (e.g., EiceDRIVER 1ED31xxMU12H Compact, EiceDRIVERTM 1ED020I12-B2 Enhanced, EiceDRIVERTM Single IGBT Driver IC, EiceDRIVERTM 1EDC Compact), digital motor control products (e.g., iMOTIONTM IMC100, iMOTIONTM IMC300A, iMOTIONTM IMM101T/IMM102T - Smart IPM for motor control, TLE9871QXA20 Microcontroller with PWM Interface and BLDC MOSFET Driver for Automotive Applications), engine management products (e.g., TLE8080EM, TLE8888QK, TLE8088EM), transmission current control products (e.g., TLE7242-2G 4 Channel Fixed Frequency Constant Current Control IC, TLE82452-3SA 2 Channel High-Side and Low-Side Linear Solenoid Driver IC), 32-bit microcontroller products (e.g., XMC1000, XMC4000, AURIXTM TC2x, AURIXTM TC3x), MEMS products (e.g., IM69D130, IM69D120), current sensor products (e.g., TLI4971-A120T5-U-E0001, TLI4971-A120T5-E0001, TLI4970-D025T5) and transceiver products (e.g., IFX1040SJ, IFX1050G VIO, IFX1051SJ, IFX1050G, IFX1051LE), ASICs, automotive system ICs, battery management ICs, ESD and surge protection devices, HiRel devices, MCUs, RF & Wireless control devices, security & smart card devices, sensors, transceivers, transistors, diodes, and similar systems, products, devices, and integrated circuits, including products manufactured via 65nm technology process (“Infineon APC Products”).

14. On information and belief, Defendant Infineon (directly or through its Infineon Foundry Partners such as UMC and/or TSMC) uses Applied Materials' E3 system and/or PDF Solutions' Exensio system to design, develop, or manufacture the Infineon APC Products either domestically for importation into the United States for use, sale, and/or offer for sale in this district and throughout the United States.

15. On information and belief, Defendant Infineon, directly and/or through one or more of the Infineon Foundry Partners (e.g., UMC), also employs Applied Materials' SmartFactory system or platform, including Advanced Productivity Family ("APF") solutions and Smart Scheduling (collectively, "SmartFactory") and/or similar proprietary or third-party scheduling and dispatching platform hardware and/or software (e.g., with similar technical and functional features) to design, develop, and/or manufacture Defendant Infineon's semiconductor devices, including integrated circuits. *See, e.g.,* "UMC Shares Success With The Applied SmartFactory®," *available at* [https://www.appliedmaterials.com/files/umc-china\\_0.mp4](https://www.appliedmaterials.com/files/umc-china_0.mp4) (last accessed Oct. 12, 2020); *see also* "Infineon Technologies Shares Insights on Manufacturing Improvement Using the Applied SmartFactory," *available at* <https://www.appliedmaterials.com/files/videos/converted/APG-Infineon-Tech-Video.mp4> (last accessed Oct. 12, 2020).

16. Upon information and belief, Defendant Infineon (directly or through its Infineon Foundry Partners such as UMC) employs Applied Materials' semiconductor fabrication or manufacturing equipment, platforms, and/or framework (e.g., Applied Materials' SmartFactory including SmartSched) at Infineon's or UMC's manufacturing facilities. On information and belief, Defendant Infineon employs similar in-house or proprietary scheduling and dispatching

platform (with technical and functional features similar to SmartFactory) at its own manufacturing facilities.

17. On information and belief, Defendant Infineon (directly or through its Infineon Foundry Partners such as UMC) employs Applied Materials' SmartFactory and/or other similar Infineon proprietary or third-party scheduling and dispatching platform hardware and/or software (e.g., with similar technical and functional features) to design, develop or manufacture one or more systems, products, and/or devices for importation into the United States for use, sale, and/or offer for sale in this District and throughout the United States, including, but not limited to, semiconductor products and devices, such as MOSFET products (e.g. 20V-40V N-Channel Automotive MOSFET, 55V-60V N-Channel Automotive MOSFET, 75V-100V N-Channel Automotive MOSFET, 120V-300V N-Channel Automotive MOSFET, 600V-800V N-Channel Automotive MOSFET, 20V-150V P-Channel Automotive MOSFET, 30V-55V Dual N and P-Channel Automotive MOSFET, 950V CoolMOSa P7 SJ Power Device, 600V CoolMOS CFD7 Power Transistor, 600V CoolMOS C7 Power Transistor, OptiMOSTM 2 + OptiMOSTMP 2 Small Signal Transistor), IGBT products (e.g., TRENCHSTOP IGBT 7, TRENCHSTOP 5 Advanced Isolation), gate driver products (e.g., EiceDRIVER 1ED31xxMU12H Compact, EiceDRIVERTM 1ED020I12-B2 Enhanced, EiceDRIVERTM Single IGBT Driver IC, EiceDRIVERTM 1EDC Compact), digital motor control products (e.g., iMOTIONTM IMC100, iMOTIONTM IMC300A, iMOTIONTM IMM101T/IMM102T - Smart IPM for motor control, TLE9871QXA20 Microcontroller with PWM Interface and BLDC MOSFET Driver for Automotive Applications), engine management products (e.g., TLE8080EM, TLE8888QK, TLE8088EM), transmission current control products (e.g. TLE7242-2G 4 Channel Fixed Frequency Constant Current Control IC, TLE82452-3SA 2 Channel High-Side and Low-Side



Linear Solenoid Driver IC), 32-bit microcontroller products (e.g., XMC1000, XMC4000, AURIX™ TC2x, AURIX™ TC3x), MEMS products (e.g., IM69D130, IM69D120), current sensor products (e.g. TLI4971-A120T5-U-E0001, TLI4971-A120T5-E0001, TLI4970-D025T5) and transceiver products (e.g., IFX1040SJ, IFX1050G VIO, IFX1051SJ, IFX1050G, IFX1051LE), and similar systems, products, devices, and integrated circuits (“Infineon Scheduling Products”).

18. On information and belief, Defendant Infineon (directly or through its Infineon Foundry Partners such as UMC) uses Applied Materials’ SmartFactory and/or other similar Infineon proprietary or third-party scheduling and dispatching platform hardware and/or software (e.g., with similar technical and functional features) to design, develop, or manufacture the Infineon Scheduling Products for importation into the United States for use, sale, and/or offer for sale in this district and throughout the United States.

19. On information and belief, Defendant Infineon (directly and/or through its Infineon Foundry Partners such as UMC and/or TSMC) has a contractual relationship with ASML Holding N.V. and/or its subsidiaries (“ASML”) and that Infineon, and/or one or more of the Infineon Foundry Partners, employs ASML’s semiconductor fabrication or manufacturing equipment and/or platforms (e.g., ASML’s TWINSCAN system hardware and software or “TWINSCAN”) to design, develop, and/or manufacture Defendant Infineon’s semiconductor products and devices, such as MOSFET products (e.g. 20V-40V N-Channel Automotive MOSFET, 55V-60V N-Channel Automotive MOSFET, 75V-100V N-Channel Automotive MOSFET, 120V-300V N-Channel Automotive MOSFET, 600V-800V N-Channel Automotive MOSFET, 20V-150V P-Channel Automotive MOSFET, 30V-55V Dual N and P-Channel Automotive MOSFET, 950V CoolMOSa P7 SJ Power Device, 600V CoolMOS CFD7 Power

Transistor, 600V CoolMOS C7 Power Transistor, OptiMOSTM 2 + OptiMOSTMP 2 Small Signal Transistor), IGBT products (e.g., TRENCHSTOP IGBT 7, TRENCHSTOP 5 Advanced Isolation), gate driver products (e.g., EiceDRIVER 1ED31xxMU12H Compact, EiceDRIVERTM 1ED020I12-B2 Enhanced, EiceDRIVERTM Single IGBT Driver IC, EiceDRIVERTM 1EDC Compact), digital motor control products (e.g., iMOTIONTM IMC100, iMOTIONTM IMC300A, iMOTIONTM IMM101T/IMM102T - Smart IPM for motor control, TLE9871QXA20 Microcontroller with PWM Interface and BLDC MOSFET Driver for Automotive Applications), engine management products (e.g., TLE8080EM, TLE8888QK, TLE8088EM), transmission current control products (e.g. TLE7242-2G 4 Channel Fixed Frequency Constant Current Control IC, TLE82452-3SA 2 Channel High-Side and Low-Side Linear Solenoid Driver IC), 32-bit microcontroller products (e.g., XMC1000, XMC4000, AURIXTM TC2x, AURIXTM TC3x), MEMS products (e.g., IM69D130, IM69D120), current sensor products (e.g. TLI4971-A120T5-U-E0001, TLI4971-A120T5-E0001, TLI4970-D025T5) and transceiver products (e.g., IFX1040SJ, IFX1050G VIO, IFX1051SJ, IFX1050G, IFX1051LE), ASICs, automotive system ICs, battery management ICs, ESD and surge protection devices, HiRel devices, MCUs, RF & Wireless control devices, security & smart card devices, sensors, transceivers, transistors, diodes, and similar systems, products, devices, and integrated circuits, including products manufactured via 65nm technology process (“Infineon TWINSKAN Products”). *See, e.g.*, “BRIEF-Taiwan’s UMC orders equipment from ASML for T\$657 mln,” *available at* <https://www.reuters.com/article/umc-corp-asml-holding-brief/brief-taiwans-umc-orders-equipment-from-asml-for-t657-mln-idUSS7N0P700I20140728> (last accessed October 12, 2020); *see also* “UMC buys equipment from ASML,” *available at* <https://www.digitimes.com/news/a20160621PM200.html> (last accessed October 12, 2020); *see*

*also* “ASML shares gain after reports of large TSMC order,” *available at* <https://seekingalpha.com/news/3636158-asml-shares-gain-after-reports-of-large-tsmc-order> (last visited Oct. 12, 2020); *see also* “ASML apparently beats Nikon for UMC’s huge 300-mm scanner order,” *available at* <https://www.eetimes.com/asml-apparently-beats-nikon-for-umcs-huge-300-mm-scanner-order/> (last accessed October 12, 2020); *see also* “ASML’s NXE Platform Performance,” *available at* <http://euvlsymposium.lbl.gov/pdf/2013/pres/RudyPeeters.pdf> (last visited Oct. 12, 2020).

20. On information and belief, Defendant Infineon also has a contractual relationship with ASML and employs ASML’s semiconductor fabrication or manufacturing equipment, platforms, and/or framework (e.g. ASML’s TWINSCAN system) at Infineon’s own manufacturing facilities. *See, e.g., see* “Infineon orders \$42.5 million of 300-mm scanners from ASML,” *available at* <https://www.eetimes.com/infineon-orders-42-5-million-of-300-mm-scanners-from-asml/> (last accessed October 12, 2020).

21. On information and belief, Defendant Infineon (directly or through its Infineon Foundry Partners such as UMC and/or TSMC) uses ASML’s TWINSCAN platform and/or its software to design, develop, or manufacture the Infineon TWINSCAN Products for importation into the United States for use, sale, and/or offer for sale in this district and throughout the United States.

22. On information and belief, Defendant Infineon (directly and/or through its Infineon Foundry Partners such as TSMC and/or UMC) has a contractual relationship with ASML and/or its subsidiaries (*see, e.g.,* “ASML shares gain after reports of large TSMC order,” *available at* <https://seekingalpha.com/news/3636158-asml-shares-gain-after-reports-of-large-tsmc-order> (last visited Oct. 12, 2020); *see also* “ASML apparently beats Nikon for UMC’s huge

300-mm scanner order,” *available at* <https://www.eetimes.com/asml-apparently-beats-nikon-for-umcs-huge-300-mm-scanner-order/> (last accessed October 12, 2020); *see also* “ASML’s NXE Platform Performance,” *available at* <http://euvsymposium.lbl.gov/pdf/2013/pres/RudyPeeters.pdf> (last visited Oct. 12, 2020); *see also* “UMC buys equipment from ASML,” *available at* <https://www.digitimes.com/news/a20160621PM200.html> (last visited Oct. 12, 2020); *see also* “BRIEF-Taiwan’s UMC orders equipment from ASML for T\$657 mln,” *available at* <https://www.reuters.com/article/umc-corp-asml-holding-brief/brief-taiwans-umc-orders-equipment-from-asml-for-t657-mln-idUSS7N0P700I20140728> (last accessed October 12, 2020); *see also* LinkedIn Profile for Spencer Lin, Operation Manager at ASML, *available at* <https://www.linkedin.com/in/spencer-lin-a48a0082/> (last visited Oct. 12, 2020); LinkedIn Profile for Leo Li, Product Engineer at ASML, *available at* <https://www.linkedin.com/in/leo-li-74222754/> (last visited Oct. 12, 2020); LinkedIn Profile for Tsung Ming C., Applicant Engineer at ASML, *available at* <https://www.linkedin.com/in/tsung-ming-c-49b4b77/> (last visited Oct. 12, 2020); LinkedIn Profile for Vince Liu, Product Manager at ASML, *available at* <https://www.linkedin.com/in/vince-liu-4820b149/> (last visited Oct. 12, 2020); and LinkedIn Profile for Henry Yeh, Applicant Engineer at ASML, *available at* <https://www.linkedin.com/in/heavyyeh/> (last visited Oct. 12, 2020)), and that Infineon (directly or through one or more of the Infineon Foundry Partners) employs ASML’s semiconductor fabrication or manufacturing equipment and/or platforms (e.g., ASML’s YieldStar metrology and inspection system hardware and software or “YieldStar”) to design, develop, and/or manufacture Defendant Infineon’s semiconductor products and devices, such as MOSFET products (e.g. 20V-40V N-Channel Automotive MOSFET, 55V-60V N-Channel Automotive

MOSFET, 75V-100V N-Channel Automotive MOSFET, 120V-300V N-Channel Automotive MOSFET, 600V-800V N-Channel Automotive MOSFET, 20V-150V P-Channel Automotive MOSFET, 30V-55V Dual N and P-Channel Automotive MOSFET, 950V CoolMOSa P7 SJ Power Device, 600V CoolMOS CFD7 Power Transistor, 600V CoolMOS C7 Power Transistor, OptiMOSTM 2 + OptiMOSTMP 2 Small Signal Transistor), IGBT products (e.g., TRENCHSTOP IGBT 7, TRENCHSTOP 5 Advanced Isolation), gate driver products (e.g., EiceDRIVER 1ED31xxMU12H Compact, EiceDRIVERTM 1ED020I12-B2 Enhanced, EiceDRIVERTM Single IGBT Driver IC, EiceDRIVERTM 1EDC Compact), digital motor control products (e.g., iMOTIONTM IMC100, iMOTIONTM IMC300A, iMOTIONTM IMM101T/IMM102T - Smart IPM for motor control, TLE9871QXA20 Microcontroller with PWM Interface and BLDC MOSFET Driver for Automotive Applications), engine management products (e.g., TLE8080EM, TLE8888QK, TLE8088EM), transmission current control products (e.g. TLE7242-2G 4 Channel Fixed Frequency Constant Current Control IC, TLE82452-3SA 2 Channel High-Side and Low-Side Linear Solenoid Driver IC), 32-bit microcontroller products (e.g., XMC1000, XMC4000, AURIXTM TC2x, AURIXTM TC3x), MEMS products (e.g., IM69D130, IM69D120), current sensor products (e.g. TLI4971-A120T5-U-E0001, TLI4971-A120T5-E0001, TLI4970-D025T5) and transceiver products (e.g., IFX1040SJ, IFX1050G VIO, IFX1051SJ, IFX1050G, IFX1051LE), ASICs, automotive system ICs, battery management ICs, ESD and surge protection devices, HiRel devices, MCUs, RF & Wireless control devices, security & smart card devices, sensors, transceivers, transistors, diodes, and similar systems, products, devices, and integrated circuits, including products manufactured via 65nm technology process (“Infineon YieldStar Products”).

23. On information and belief, Defendant Infineon (directly or through its Infineon Foundry Partners such as TSMC and/or UMC) uses ASML's YieldStar platform and/or its software to design, develop, or manufacture the Infineon YieldStar Products for importation into the United States for use, sale, and/or offer for sale in this district and throughout the United States.

24. On information and belief, Defendant Infineon (directly and/or through its Infineon Foundry Partners) employs the infringing method of forming circuit structures to design, develop, and/or manufacture Defendant Infineon's semiconductor products and devices, such as MOSFET products (e.g. 20V-40V N-Channel Automotive MOSFET, 55V-60V N-Channel Automotive MOSFET, 75V-100V N-Channel Automotive MOSFET, 120V-300V N-Channel Automotive MOSFET, 600V-800V N-Channel Automotive MOSFET, 20V-150V P-Channel Automotive MOSFET, 30V-55V Dual N and P-Channel Automotive MOSFET, 950V CoolMOSa P7 SJ Power Device, 600V CoolMOS CFD7 Power Transistor, 600V CoolMOS C7 Power Transistor, OptiMOSTM 2 + OptiMOSTMP 2 Small Signal Transistor), IGBT products (e.g., TRENCHSTOP IGBT 7, TRENCHSTOP 5 Advanced Isolation), gate driver products (e.g., EiceDRIVER 1ED31xxMU12H Compact, EiceDRIVERTM 1ED020I12-B2 Enhanced, EiceDRIVERTM Single IGBT Driver IC, EiceDRIVERTM 1EDC Compact), digital motor control products (e.g., iMOTIONTM IMC100, iMOTIONTM IMC300A, iMOTIONTM IMM101T/IMM102T - Smart IPM for motor control, TLE9871QXA20 Microcontroller with PWM Interface and BLDC MOSFET Driver for Automotive Applications), engine management products (e.g., TLE8080EM, TLE8888QK, TLE8088EM), transmission current control products (e.g. TLE7242-2G 4 Channel Fixed Frequency Constant Current Control IC, TLE82452-3SA 2 Channel High-Side and Low-Side Linear Solenoid Driver IC), 32-bit microcontroller products

(e.g., XMC1000, XMC4000, AURIX™ TC2x, AURIX™ TC3x), MEMS products (e.g., IM69D130, IM69D120), current sensor products (e.g. TLI4971-A120T5-U-E0001, TLI4971-A120T5-E0001, TLI4970-D025T5) and transceiver products (e.g., IFX1040SJ, IFX1050G VIO, IFX1051SJ, IFX1050G, IFX1051LE), and similar systems, products, devices, and integrated circuits (“Infineon Sub-30nm Products”).

25. On information and belief, Defendant Infineon (directly or through its Infineon Foundry Partners) uses this infringing method to fabricate or manufacture the Infineon Sub-30nm Products for importation into the United States for use, sale, and/or offer for sale in this district and throughout the United States.

26. Defendant Infineon works with third parties to design and/or develop third party products, such as internet of things products, communications products, automotive products, computing products, and embedded products that include one or more Infineon APC Products, Infineon Scheduling Products, Infineon TWINSKAN Products, Infineon YieldStar Products, and/or Infineon Sub 30-nm Products (“Third Party Products”). For example, on information and belief, Infineon is a producer of automotive microprocessors. Infineon assists third parties from the automotive industry, directly or through others, to import the Third Party Products into the United States and offer to sell, and sell, such Third Party Products in the United States.

### **JURISDICTION AND VENUE**

27. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1, *et seq.*

28. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

29. Defendant Infineon is subject to this Court’s general personal jurisdiction at least because Defendant Infineon America is a resident of Massachusetts as defined by Massachusetts

law. On information and belief, Infineon Technologies Americas Corp. has a regular and established place of business in Andover, MA.

30. Defendant Infineon is additionally subject to this Court's general and specific personal jurisdiction because Infineon has sufficient minimum contacts within the Commonwealth of Massachusetts and this District, pursuant to due process and/or the Massachusetts Long Arm Statute, Massachusetts General Law Chapter 223A, § 3. On information and belief, Infineon has contracted to supply services or things in the Commonwealth of Massachusetts and this District; Infineon committed the tort of patent infringement in the Commonwealth of Massachusetts and this District; Infineon purposefully availed itself of the privileges of conducting business in the Commonwealth of Massachusetts and in this District; Infineon regularly conducts and solicits business within the Commonwealth of Massachusetts and within this District; Infineon recruits residents of the Commonwealth of Massachusetts and this District for employment inside or outside the Commonwealth of Massachusetts; Plaintiff's causes of action arise directly from Infineon's business contacts and other activities in the Commonwealth of Massachusetts and this District; and Infineon designs, develops, manufactures, distributes, makes available, imports, sells and offers to sell products and services throughout the United States, including in this Judicial District, and introduces infringing products and services that into the stream of commerce knowing that they would be used and sold in this Judicial District and elsewhere in the United States.

31. Venue is proper in this judicial district under 28 U.S.C. § 1391 and 28 U.S.C. § 1400(b) at least because Defendant Infineon Technologies AG is a foreign corporation and is subject to personal jurisdiction in this District and/or has regularly conducted business in this District, and because certain of the acts complained of herein occurred in this District. Venue is



also proper for Defendant Infineon Technologies Americas Corp. at least because Infineon Technologies Americas Corp. has a regular and established place of business in this District, including at least at 205 Crawford Street, Leominster, MA 01453 and 35 New England Business Center Drive, Andover, MA 01810.

32. Additionally, Defendant Infineon—directly or through intermediaries (including distributors, retailers, and others), subsidiaries, alter egos, and/or agents—ships, distributes, offers for sale, and/or sells their products in the United States and this District. Infineon has purposefully and voluntarily placed one or more of its products into the stream of commerce that infringe the Asserted Patents with the awareness and/or intent that they will be purchased by consumers and businesses in this District. Defendant Infineon knowingly and purposefully ships infringing products into, and within, this District through an established distribution channel. These infringing products have been, and continue to be, purchased by consumers and businesses in this District.

33. For example, on information and belief, Infineon operates a semiconductor fab in Leominster, MA that produces Power and Sensor systems semiconductors for sale, offer for sale, and/or distribution in the United States. (*See* <https://www.infineon.com/cms/en/careers/jobsearch/jobsearch/301775-Supervisor-Manufacturing-Production/?#!source=111> (last visited October 12, 2020)).

### **THE PATENTS-IN-SUIT**

34. On November 8, 2001, U.S. Patent Application No. 10/010,463 was filed at the USPTO (“the ’463 Application”). The ’463 Application was duly examined and issued as U.S. Patent No. 6,660,651 (“the ’651 patent”), entitled “Adjustable Wafer Stage, and a Method and

System for Performing Process Operations Using Same” on December 9, 2003. A true and correct copy of the ’651 patent is attached hereto as Exhibit A.

35. Ocean Semiconductor is the owner of the ’651 patent and has the full and exclusive right to bring actions and recover past, present, and future damages for Infineon’s infringement of the ’651 patent.

36. The inventions of the ’651 patent resolve technical problems related to cross-wafer variations or non-uniformity characteristics in semiconductor wafers that are caused by different deposition and etch processes performed during semiconductor manufacturing. For example, the ’651 patent provides a process tool that includes an adjustable wafer stage that allows positioning or re-positioning of the wafer stage, such as raising, lowering, and varying a tilt of the surface of the wafer stage, in order to effectuate the deposition rates of semiconductor materials formed on a wafer.

37. The claims of the ’651 patent do not merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claims of the ’651 patent recite one or more inventive concepts that are rooted in computerized semiconductor manufacturing or fabrication technologies, and overcome problems specifically arising in the realm of computerized semiconductor manufacturing or fabrication technologies.

38. The ’651 patent is directed to an invention that is not merely the routine or conventional use of the Internet or a generic computer. Instead, it is directed to a process tool with an adjustable wafer stage that offers customizable positioning features to facilitate raising, lowering, or tilting of the wafer stage. This design allows surface adjustment of a wafer surface on which semiconductor materials are deposited to ensure a surface profile that is uniform across

the surface of each wafer. The '651 patent claims thus specify how a semiconductor manufacturing system is manipulated to yield a desired result.

39. Accordingly, each claim of the '651 patent recites a combination of elements sufficient to ensure that the claim in practice amounts to significantly more than a patent on an ineligible concept.

40. On April 30, 2002, U.S. Patent Application No. 10/135,145 was filed at the USPTO (the "'145 Application"). The '145 Application was duly examined and issued as U.S. Patent No. 6,907,305 ("the '305 Patent"), entitled "Agent Reactive Scheduling in an Automated Manufacturing Environment" on June 14, 2005. A true and correct copy of the '305 patent is attached hereto as Exhibit B.

41. Ocean Semiconductor is the owner of the '305 patent and has the full and exclusive right to bring actions and recover past, present, and future damages for Infineon's infringement of the '305 patent.

42. The inventions of the '305 patent resolve technical problems related to utilization of process tools and scheduling and execution control of factory control systems. For example, the '305 patent describes agents that reactively schedule, initiate, and execute activities, such as lot transport and processing, in response to certain events occurring during the semiconductor manufacturing process.

43. The claims of the '305 patent do not merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claims of the '305 patent recite one or more inventive concepts that are rooted in computerized semiconductor manufacturing or fabrication technologies, and overcome

problems specifically arising in the realm of computerized semiconductor manufacturing or fabrication technologies.

44. The '305 patent is directed to an invention that is not merely the routine or conventional use of the Internet or a generic computer. Instead, it is directed to a manufacturing system that facilitates the reactive scheduling of events resulting from certain factory state changes occurred within the process flow, such as a downtime occurrence, a machine becoming available, a processing chamber being down, a lot departing a machine, a preventative maintenance and equipment qualification being detected, and a wafer being completed. This system, in turn, allows efficient management of factory control systems and optimizes wafer throughput. The '305 patent claims thus specify how a semiconductor manufacturing system is manipulated to yield a desired result.

45. Accordingly, each claim of the '305 patent recites a combination of elements sufficient to ensure that the claim in practice amounts to significantly more than a patent on an ineligible concept.

46. On July 31, 2000, U.S. Patent Application No. 09/629,073 was filed at the USPTO ("the '073 Application"). The '073 Application was duly examined and issued as U.S. Patent No. 6,725,402 ("the '402 Patent"), entitled "Method and Apparatus for Fault Detection of a Processing Tool and Control Thereof Using an Advanced Process Control (APC) Framework" on April 20, 2004. A true and correct copy of the '402 patent is attached hereto as Exhibit C.

47. Ocean Semiconductor is the owner of the '402 patent and has the full and exclusive right to bring actions and recover past, present, and future damages for Infineon's infringement of the '402 patent.

48. The inventions of the '402 patent resolve technical problems related to the delay in reporting manufacturing faults during semiconductor manufacturing, which led to faulty semiconductor devices being produced. For example, the '402 patent describes systems and methods for shutting down a process tool or halting a manufacturing process in the presence of a manufacturing fault.

49. The claims of the '402 patent do not merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claims of the '402 patent recite one or more inventive concepts that are rooted in computerized semiconductor manufacturing or fabrication technologies, and overcome problems specifically arising in the realm of computerized semiconductor manufacturing or fabrication technologies.

50. The '402 patent is directed to an invention that is not merely the routine or conventional use of the Internet or a generic computer. Instead, it is directed to a fault detection system in a semiconductor manufacturing process to detect the presence of a manufacturing fault and perform corrective measures in an expedient manner. The '402 patent claims thus specify how a semiconductor manufacturing system is manipulated to yield a desired result.

51. Accordingly, each claim of the '402 patent recites a combination of elements sufficient to ensure that the claim in practice amounts to significantly more than a patent on an ineligible concept.

52. On June 13, 2005, U.S. Patent Application No. 11/151,098 was filed at the USPTO ("the '098 Application"). The '098 Application was duly examined and issued as U.S. Patent No. 6,968,248 ("the '248 Patent"), entitled "Agent Reactive Scheduling in an Automated

Manufacturing Environment” on November 22, 2005. A true and correct copy of the ’248 patent is attached hereto as Exhibit D.

53. Ocean Semiconductor is the owner of the ’248 patent and has the full and exclusive right to bring actions and recover past, present, and future damages for Infineon’s infringement of the ’248 patent.

54. The inventions of the ’248 patent resolve technical problems related to utilization of process tools and scheduling and execution control of factory control systems. For example, the ’248 patent describes agents that reactively schedule, initiate, and execute activities, such as lot transport and processing, in response to certain events occurring during the semiconductor manufacturing process.

55. The claims of the ’248 patent do not merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claims of the ’248 patent recite one or more inventive concepts that are rooted in computerized semiconductor manufacturing or fabrication technologies, and overcome problems specifically arising in the realm of computerized semiconductor manufacturing or fabrication technologies.

56. The ’248 patent is directed to an invention that is not merely the routine or conventional use of the Internet or a generic computer. Instead, it is directed to a manufacturing system that facilitates the reactive scheduling of events resulting from certain factory state changes occurred within the process flow, such as a downtime occurrence, a machine becoming available, a processing chamber being down, a lot departing a machine, a preventative maintenance and equipment qualification being detected, and a wafer being completed. This system, in turn, allows efficient management of factory control systems and optimizes wafer

throughput. The '248 patent claims thus specify how a semiconductor manufacturing system is manipulated to yield a desired result.

57. Accordingly, each claim of the '248 patent recites a combination of elements sufficient to ensure that the claim in practice amounts to significantly more than a patent on an ineligible concept.

58. On May 2, 2000, U.S. Patent Application No. 09/562,659 was filed at the USPTO ("the '659 Application"). The '659 Application was duly examined and issued as U.S. Patent No. 6,420,097 ("the '097 Patent"), entitled "Hardmask Trim Process," on July 16, 2002. A true and correct copy of the '097 patent is attached hereto as Exhibit E.

59. Ocean Semiconductor is the owner of the '097 patent and has the full and exclusive right to bring actions and recover past, present, and future damages for Infineon's infringement of the '097 patent.

60. The inventions of the '097 patent resolve technical problems related to forming circuit structures that are smaller than the capability of current lithographic technologies while using ultra-thin resist processes given that these processes generally would leave insufficient amount of material to completely etch the underlying film. For example, the '097 patent describes a method of forming circuit structures with linewidths that are smaller than what could be achievable by conventional lithographic techniques on ultra-thin resist layers.

61. The claims of the '097 patent do not merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claims of the '097 patent recite one or more inventive concepts that are rooted in computerized semiconductor manufacturing or fabrication technologies, and overcome

problems specifically arising in the realm of computerized semiconductor manufacturing or fabrication technologies.

62. The '097 patent is directed to an invention that is not merely the routine or conventional use of the Internet or a generic computer. Instead, it is directed to lithographic processes involving the utilization of a hardmask that is patterned and trimmed to reduce the linewidth before proceeding to etch the underlying gate conductive layer. The '097 patent claims thus specify how a semiconductor manufacturing process is manipulated to yield a desired result.

63. Accordingly, each claim of the '097 patent recites a combination of elements sufficient to ensure that the claim in practice amounts to significantly more than a patent on an ineligible concept.

64. On March 5, 2003, U.S. Patent Application No. 10/379,738, was filed at the USPTO ("the '738 Application"). The '738 Application was duly examined and issued as U.S. Patent No. 7,080,330 ("the '330 patent"), entitled "Concurrent Measurement of Critical Dimension and Overlay in Semiconductor Manufacturing," on Jul. 18, 2006. A true and correct copy of the '330 patent is attached hereto as Exhibit F.

65. Ocean Semiconductor is the owner of the '330 patent and has the full and exclusive right to bring actions and recover past, present, and future damages for Infineon's infringement of the '330 patent.

66. The inventions of the '330 patent resolve technical problems related to forming integrated circuits without overlay errors. For example, the '330 patent describes a method that monitors and controls a semiconductor fabrication process that mitigate overlay errors and achieve desired critical dimensions.



67. The claims of the '330 patent do not merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claims of the '330 patent recite one or more inventive concepts that are rooted in computerized semiconductor manufacturing or fabrication technologies, and overcome problems specifically arising in the realm of computerized semiconductor manufacturing or fabrication technologies.

68. The '330 patent is directed to an invention that is not merely the routine or conventional use of the Internet or a generic computer. Instead, it is directed to, for example, partitioning a wafer into grid blocks to facilitate concurrent measurements of critical dimensions and overlay as the wafer matriculates through the semiconductor fabrication processes in order to mitigate overlay errors and bring critical dimension within acceptable tolerances. The '330 patent claims thus specify how a semiconductor manufacturing process is manipulated to yield a desired result.

69. Accordingly, each claim of the '330 patent recites a combination of elements sufficient to ensure that the claim in practice amounts to significantly more than a patent on an ineligible concept.

70. On May 1, 2003, U.S. Patent Application No. 10/427,620, was filed at the USPTO ("the '620 Application"). The '620 Application was duly examined and issued as U.S. Patent No. 6,836,691 ("the '691 patent"), entitled "Method and Apparatus for Filtering Metrology Data Based on Collection Purpose," on Dec. 28, 2004. A true and correct copy of the '691 patent is attached hereto as Exhibit G.

71. Ocean Semiconductor is the owner of the '691 patent and has the full and exclusive right to bring actions and recover past, present, and future damages for Infineon's infringement of the '691 patent.

72. The inventions of the '691 patent resolve technical problems related to a process controller collecting metrology data that does not accurately reflect the state of the fabrication process or the device(s) being manufactured. For example, the '691 patent describes a method of generating context data for the metrology data and filtering the metrology data to improve the performance of the process controller by removing outlier data that exhibits variation from a source other than normal process variation.

73. The claims of the '691 patent do not merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claims of the '691 patent recite one or more inventive concepts that are rooted in computerized semiconductor manufacturing or fabrication technologies, and overcome problems specifically arising in the realm of computerized semiconductor manufacturing or fabrication technologies.

74. The '691 patent is directed to an invention that is not merely the routine or conventional use of the Internet or a generic computer. Instead, it is directed to, for example, a process controller that gathers and filters metrology data to remove data originated from non-process sources of variation in order to, for example, accurately identify a fault detection. The '691 patent claims thus specify how a semiconductor manufacturing process is manipulated to yield a desired result.

75. Accordingly, each claim of the '691 patent recites a combination of elements sufficient to ensure that the claim in practice amounts to significantly more than a patent on an ineligible concept.

76. On Nov 2, 2004, U.S. Patent Application No. 10/979,309, was filed at the USPTO ("the '309 Application"). The '309 Application was duly examined and issued as U.S. Patent No. 8,676,538 ("the '538 patent"), entitled "Adjusting Weighting of a parameter Relating to Fault Detection Based on a Detected Fault," on Mar. 18, 2014. A true and correct copy of the '538 patent is attached hereto as Exhibit H.

77. Ocean Semiconductor is the owner of the '538 patent and has the full and exclusive right to bring actions and recover past, present, and future damages for Infineon's infringement of the '538 patent.

78. The inventions of the '538 patent resolve technical problems related to inaccurately detecting faults in semiconductor manufacturing processes. For example, the '691 patent describes a method for employing a dynamic weighting technique in fault detection analysis, including determining a relationship of a parameter relating to the fault detection analysis to a detected fault and adjusting a weighting associating with the parameter based upon the relationship of the parameter to the detected fault.

79. The claims of the '538 patent do not merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claims of the '538 patent recite one or more inventive concepts that are rooted in computerized semiconductor manufacturing or fabrication technologies, and overcome problems specifically arising in the realm of computerized semiconductor manufacturing or fabrication technologies.

80. The '538 patent is directed to an invention that is not merely the routine or conventional use of the Internet or a generic computer. Instead, it is directed to, for example, performing fault detection analyses using dynamic weighting processes to accurately assess faults associated with processing semiconductor wafers. The '538 patent claims thus specify how a semiconductor manufacturing process is manipulated to yield a desired result.

81. Accordingly, each claim of the '538 patent recites a combination of elements sufficient to ensure that the claim in practice amounts to significantly more than a patent on an ineligible concept.

**COUNT I: INFRINGEMENT OF THE '651 PATENT**

82. Ocean Semiconductor repeats and re-alleges the allegations of the above paragraphs as if fully set forth herein.

83. At least as of October 15, 2020, Ocean Semiconductor placed Infineon on actual notice of the '651 patent and actual notice that its actions constituted and continued to constitute infringement of the '651 patent. Infineon has had actual knowledge of the '651 patent and its own infringement of the '651 patent since at least that time.

84. On information and belief, Defendant Infineon has directly infringed and continues to infringe at least claim 19 of the '651 patent literally or under the doctrine of equivalents, by making, using, selling, or offering for sale within the United States, or importing into the United States, without authority or license, integrated circuits designed, developed, fabricated, and/or manufactured using the ASML TWINSCAN system, and systems, products, and/or devices containing these integrated circuits including at least the Infineon TWINSCAN Products ("'651 Accused Products") in violation of 35 U.S.C. § 271(a). The '651 Accused Products are manufactured by a process including all of the limitations of at least claim 19 of the

'651 patent. Each such product includes an integrated circuit fabricated or manufactured using, for example, the ASML TWINSKAN system.

85. Discovery is expected to uncover the full extent of Infineon's infringement of the '651 patent beyond the '651 Accused Products already identified herein.

86. On information and belief, Infineon also has directly infringed and continues to infringe at least claim 19 of the '651 patent literally or under the doctrine of equivalents, by importing into the United States, and/or using, and/or selling, and/or offering for sale in the United States, without authority or license, the '651 Accused Products, in violation of 35 U.S.C. § 271(g). On information and belief, Infineon imports the '651 Accused Products into the United States for sales and distribution to customers located in the United States. On information and belief, Infineon sells and/or offers for sale the '651 Accused Products in the United States. For example, Infineon provides direct sales through its own sales channels and/or its distributors or contract manufacturers and sells the '651 Accused Products to businesses including original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales of the '651 Accused Products in the United States. On information and belief, Infineon offers the '651 Accused Products for sale in the United States. For example, Infineon engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

87. The '651 Accused Products are manufactured by a process including all of the limitations of at least claim 19 of the '651 patent. Each such product includes an integrated circuit fabricated or manufactured using, for example, ASML's TWINSKAN system.

88. For example, during the manufacture of the '651 Accused Products, a process chamber is provided that includes a wafer stage having a surface that is adjustable. The surface

of the wafer stage is adjusted by performing at least one of raising, lowering, and varying a tilt of the surface of the wafer stage. A wafer from which the '651 Accused Products are fabricated or manufactured is positioned after adjusting the wafer stage such that a process operation is performed on the wafer positioned on the wafer stage. On information and belief, Infineon, directly or through one of its Foundry Partners (e.g., TSMC), contracted with ASML to use this process to design, develop, or manufacture the '651 Accused Products.

89. Attached hereto as Exhibit I, and incorporated by reference herein, is a claim chart detailing how each of the '651 Accused Products is manufactured using the ASML TWINSKAN system either by Infineon (to the extent that the ASML TWINSKAN system is used at Infineon's own manufacturing facilities) or by an Infineon Foundry Partner on behalf of Infineon (e.g., TSMC) that satisfies each element of at least independent claim 19 of the '651 patent, literally or under the doctrine of equivalents.

90. On information and belief, the '651 Accused Products are neither materially changed by subsequent processes nor become trivial and nonessential components of another product.

91. On information and belief, at least as of October 15, 2020, Infineon has induced and continues to induce others actively, knowingly, and intentionally, including its suppliers and contract manufacturers, to infringe one or more claims of the '651 patent, including, but not limited to, claim 19, pursuant to 35 U.S.C. § 271(b), by actively encouraging others to import into the United States, and/or make, use, sell, and/or offer to sell in the United States, the '651 Accused Products or products containing the infringing semiconductor components of the '651 Accused Products, by actively inducing others to infringe the '651 patent by making, using, selling, offering for sale, marketing, advertising, and/or importing the Accused Products to their

customers for use in downstream products that infringe, or were manufactured using processes that infringe, the '651 patent, and by instructing others to infringe the '651 patent.

92. For example, Infineon actively promotes the sale, use, and importation of the '651 Accused Products in marketing materials, technical specifications, Newsletter4Engineers publication, web pages on its website (e.g., [www.infineon.com](http://www.infineon.com)), press releases, as well as at trade shows (e.g., the Sensor + Test Trade Fair and Mobile World Congress) and through its sales and distribution channels that encourage infringing uses, sales, offers to sell, and importation of the '651 Accused Products. On information and belief, Infineon supplies customers with '651 Accused Products so that they may be used, sold, or offered for sale by those customers. For example, Infineon provides direct sales to original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales to customers in the United States. Infineon additionally provides a wide range of technical support to customers and businesses, including product-specific solutions (*see, e.g.*, <https://www.infineon.com/cms/en/about-infineon/company/contacts/support/>) and community forums (e.g., <https://www.infineonforums.com/>).

93. On information and belief, Infineon sells or offers for sale the '651 Accused Products to third parties that incorporate the '651 Accused Products into third party products ("the '651 Third Party Products").

94. On information and belief, Infineon assists third parties, directly and/or through intermediaries, in the development of the '651 Third Party Products and provides technical support and supports the sales of the '651 Third Party Products.

95. On information and belief, at least as of October 15, 2020, Infineon has induced and continues to induce third parties with specific intent or willful blindness to import, make,

use, sell, and/or offer to sell '651 Third Party Products that include at least one '651 Accused Product fabricated or manufactured using the ASML TWINSCAN system, or similar systems (e.g., with similar technical and functional features, whose make, use, sale, offer for sale, or importation constitutes direct infringement of at least one claim of the '651 patent.

96. On information and belief, the '651 Third Party Products are imported into the United States for use, sale, and/or offer for sale in this District and throughout the United States ("Imported '651 Third Party Products").

97. On information and belief, to the extent any entity other than Infineon, including but not limited to any of Infineon's Foundry Partners or third-party importers, imports the '651 Accused Products or Imported '651 Third Party Products into the United States for or on behalf of Infineon ("Third Party Importer"), Infineon is liable for inducement of the Third Party Importer to infringe one or more claims of the '651 patent, including but not limited to, claim 19, pursuant to 35 U.S.C. § 271(b). Infineon has encouraged the Third Party Importer to infringe the '651 patent and intended that it do so. This encouragement includes at least ordering or instructing the Third Party Importer to import the '651 Accused Products and/or '651 Third Party Products into the United States, providing directions and other materials to the Third Party Importer to enable such importation, and conditioning the receipt of benefits (included but not limited to payment) to the Third Party Importer on such importation. On information and belief, this behavior has continued since Infineon first became aware of the '651 patent and the infringement thereof.

98. On information and belief, to the extent any entity other than Infineon, including but not limited to any of Infineon's Foundry Partners, uses the patented method to fabricate or manufacture the '651 Accused Products or Imported '651 Third-Party Products in the United



States for or on behalf of Infineon (“Third Party Manufacturer”), Infineon is liable for inducement of infringement by the Third Party Manufacturer. Infineon has encouraged the Third Party Manufacturer to infringe the ’651 patent and intended that it do so. This encouragement includes, without limitation, ordering the ’651 Accused Products from the Third Party Manufacturer since Infineon first became aware of the ’651 patent and its infringement by the Third Party Manufacturer.

99. Infineon has benefitted and continues to benefit from the importation into the United States of the ’651 Accused Products, ’651 Third Party Products, and Imported ’651 Third Party Products.

100. Ocean Semiconductor has suffered, and continues to suffer, damages as a result of Infineon’s infringement of the ’651 patent.

101. Infineon has continued to infringe the ’651 patent since at least October 15, 2020, despite being on notice of the ’651 patent and its infringement. Infineon has therefore infringed the ’651 patent knowingly, willfully, deliberately, and in disregard of Plaintiff’s patent rights since at least October 15, 2020, at least by performing acts of infringement with actual knowledge of its direct and indirect infringement or while remaining willfully blind to the fact of its direct and indirect infringement. As a result of at least this conduct, Plaintiff is entitled to enhanced damages under 35 U.S.C. § 284 and to attorneys’ fees and costs under 35 U.S.C. § 285.

102. Ocean Semiconductor reserves the right to modify its infringement theories as discovery progresses in this case. Ocean Semiconductor shall not be estopped or otherwise limited or restricted for purposes of its infringement contentions or its claim constructions by the claim charts that it provides with this Complaint. Ocean Semiconductor intends for the claim chart (Exhibit I) for the ’651 patent to satisfy the notice requirements of Rule 8(a)(2) of the

Federal Rule of Civil Procedure. The claim chart is not Ocean Semiconductor's preliminary or final infringement contentions or preliminary or final claim construction positions.

## **COUNT II: INFRINGEMENT OF THE '402 PATENT**

103. Ocean Semiconductor repeats and re-alleges the allegations of the above paragraphs as if fully set forth herein.

104. At least as of October 15, 2020, Ocean Semiconductor placed Infineon on actual notice of the '402 patent and actual notice that its actions constituted and continued to constitute infringement of the '402 patent. Infineon has had actual knowledge of the '402 patent and its own infringement of the '402 patent since at least that time.

105. On information and belief, Infineon has directly infringed and continues to infringe at least claim 1 of the '402 patent literally or under the doctrine of equivalents, by making, using, selling, or offering for sale within the United States, or importing into the United States, without authority or license, integrated circuits designed, developed, fabricated, and/or manufactured using the Applied Materials E3 system, PDF Solutions' Exensio system, and/or systems with similar technical and functional features, and systems, products, and/or devices containing these integrated circuits including at least the Infineon APC Products ("'402 Accused Products") in violation of 35 U.S.C. § 271(a). The '402 Accused Products are manufactured by a process including all of the limitations of at least claim 1 of the '402 patent. Each such product includes an integrated circuit fabricated or manufactured using, for example, the Applied Materials E3 system and/or PDF Solutions' Exensio system.

106. Discovery is expected to uncover the full extent of Infineon's infringement of the '402 patent beyond the '402 Accused Products already identified herein.

107. On information and belief, Infineon also has directly infringed and continues to infringe at least claim 1 of the '402 patent literally or under the doctrine of equivalents, by importing into the United States, and/or using, and/or selling, and/or offering for sale in the United States, without authority or license, the '402 Accused Products, in violation of 35 U.S.C. § 271(g). On information and belief, Infineon imports the '402 Accused Products into the United States for sales and distribution to customers located in the United States. On information and belief, Infineon sells and/or offers for sale the '402 Accused Products in the United States. For example, Infineon provides direct sales through its own sales channels and/or its distributors or contract manufacturers and sells the '402 Accused Products to businesses including original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales of the '402 Accused Products in the United States. On information and belief, Infineon offers the '402 Accused Products for sale in the United States. For example, Infineon engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

108. The '402 Accused Products are manufactured by a process including all of the limitations of at least claim 1 of the '402 patent. The '402 Accused Products are made by a claimed method. Each is an integrated circuit fabricated or manufactured using, for example, the Applied Materials E3 system and/or PDF Solutions' Exensio system. For example, during the manufacture of the '402 Accused Products (e.g., by the Applied Material E3 system and/or PDF Solutions' Exensio system and/or similar systems (e.g., with similar technical and functional features)), operational state data of a processing tool related to the manufacture of a processing piece (e.g., from which the '402 Accused Products are fabricated or manufactured) is received at a first interface. The state data from the first interface is sent to a fault detection unit, including

sending the state data from the first interface to a data collection unit. The state data is accumulated at the data collection unit and translated from a first communications protocol to a second communications protocol compatible with the fault detection unit. The translated state data is sent from the data collection unit to the fault detection unit to determine if a fault condition exists with the processing tool based upon the state data received by the fault detection unit. Then, a predetermined action is performed on the processing tool in response to the presence of a fault condition, and an alarm signal indicative of the fault condition is sent to an advanced process control framework from the fault detection unit providing that a fault condition of the processing tool was determined by the fault detection unit. This manufacturing process also includes sending a signal by the framework to the first interface reflective of the predetermined action, and sending the accumulated state data from the data collection unit to the fault detection unit while a processing piece is being processed by the tool. On information and belief, Infineon, directly or through one of its Foundry Partners, contracted with Applied Materials and PDF Solutions to use this process to design, develop, or manufacture the '402 Accused Products.

109. Attached hereto as Exhibits J and K, and incorporated by reference herein, are claim charts detailing how each of the '402 Accused Products is manufactured using the Applied Materials E3 system and/or PDF Solutions' Exensio system by an Infineon Foundry Partner on behalf of Infineon (e.g., UMC and/or TSMC) or Infineon (to the extent that the Applied Materials E3 system is used at Infineon's own manufacturing facilities) that satisfies each element of at least claim 1 of the '402 patent, literally or under the doctrine of equivalents.

110. On information and belief, the '402 Accused Products are neither materially changed by subsequent processes nor become trivial and nonessential components of another product.

111. On information and belief, at least as of October 15, 2020, Infineon has induced and continues to induce others actively, knowingly, and intentionally, including its suppliers and contract manufacturers, to infringe one or more claims of the '402 patent, including, but not limited to, claim 1, pursuant to 35 U.S.C. § 271(b), by actively encouraging others to import into the United States, and/or make, use, sell, and/or offer to sell in the United States, the '402 Accused Products or products containing the infringing semiconductor components of the '402 Accused Products, by actively inducing others to infringe the '402 patent by making, using, selling, offering for sale, marketing, advertising, and/or importing the Accused Products to their customers for use in downstream products that infringe, or were manufactured using processes that infringe, the '402 patent, and by instructing others to infringe the '402 patent.

112. For example, Infineon actively promotes the sale, use, and importation of the '402 Accused Products in marketing materials, technical specifications, Newsletter4Engineers publication, web pages on its website (e.g., [www.infineon.com](http://www.infineon.com)), press releases, as well as at trade shows (e.g., the Sensor + Test Trade Fair and Mobile World Congress) and through its sales and distribution channels that encourage infringing uses, sales, offers to sell, and importation of the '402 Accused Products. On information and belief, Infineon supplies customers with '402 Accused Products so that they may be used, sold, or offered for sale by those customers. For example, Infineon provides direct sales to original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales to customers in the United States. Infineon additionally provides a

wide range of technical support to customers and businesses, including product-specific solutions (*see, e.g.*, <https://www.infineon.com/cms/en/about-infineon/company/contacts/support/>) and community forums (*e.g.*, <https://www.infineonforums.com/>). Infineon also promotes, publicly on its website, uses of the '402 Accused Products by customers in the United States.

113. On information and belief, Infineon sells or offers for sale the '402 Accused Products to third parties that incorporate the '402 Accused Products into third party products ("the '402 Third Party Products").

114. On information and belief, Infineon assists third parties, directly and/or through intermediaries, in the development and manufacture of the '402 Third Party Products and provides technical support and supports the sales of the '402 Third Party Products.

115. On information and belief, at least as of October 15, 2020, Infineon has induced and continues to induce third parties with specific intent or willful blindness to import, make, use, sell, and/or offer to sell '402 Third Party Products that include at least one '402 Accused Product fabricated or manufactured using the Applied Materials E3 system, and/or PDF Solutions' Exensio system and/or similar systems (*e.g.*, with similar technical and functional features), whose make, use, sale, offer for sale, or importation constitutes direct infringement of at least one claim of the '402 patent.

116. On information and belief, the '402 Third Party Products are imported into the United States for use, sale, and/or offer for sale in this District and throughout the United States ("Imported '402 Third Party Products").

117. On information and belief, to the extent any entity other than Infineon, including but not limited to any of Infineon's Foundry Partners or third-party importers, imports the '402 Accused Products or Imported '402 Third-Party Products into the United States for or on behalf

of Infineon (“Third Party Importer”), Infineon is liable for inducement of the Third Party Importer to infringe one or more claims of the ’402 patent, including but not limited to, claim 1, pursuant to 35 U.S.C. § 271(b). Infineon has encouraged the Third Party Importer to infringe the ’402 patent and intended that it do so. This encouragement includes at least ordering or instructing the Third Party Importer to import the ’402 Accused Products and/or ’402 Third Party Products into the United States, providing directions and other materials to the Third Party Importer to enable such importation, and conditioning the receipt of benefits (included but not limited to payment) to the Third Party Importer on such importation. On information and belief, this behavior has continued since Infineon first became aware of the ’402 patent and the infringement thereof.

118. On information and belief, to the extent any entity other than Infineon, including but not limited to any of Infineon’s Foundry Partners, uses the patented method to fabricate or manufacture the ’402 Accused Products or Imported ’402 Third-Party Products in the United States for or on behalf of Infineon (“Third Party Manufacturer”), Infineon is liable for inducement of infringement by the Third Party Manufacturer. Infineon has encouraged the Third Party Manufacturer to infringe the ’402 patent and intended that it do so. This encouragement includes, without limitation, ordering the ’402 Accused Products from the Third Party Manufacturer since Infineon first became aware of the ’402 patent and its infringement by the Third Party Manufacturer.

119. Infineon has benefitted and continues to benefit from the importation into the United States of the ’402 Accused Products, ’402 Third Party Products, and Imported ’402 Third Party Products.

120. Ocean Semiconductor has suffered, and continues to suffer, damages as a result of Infineon's infringement of the '402 patent.

121. Infineon has continued to infringe the '402 patent since at least October 15, 2020, despite being on notice of the '402 patent and its infringement. Infineon has therefore infringed the '402 patent knowingly, willfully, deliberately, and in disregard of Plaintiff's patent rights since at least October 15, 2020, at least by performing acts of infringement with actual knowledge of its direct and indirect infringement or while remaining willfully blind to the fact of its direct and indirect infringement. As a result of at least this conduct, Plaintiff is entitled to enhanced damages under 35 U.S.C. § 284 and to attorneys' fees and costs under 35 U.S.C. § 285.

122. Ocean Semiconductor reserves the right to modify its infringement theories as discovery progresses in this case. Ocean Semiconductor shall not be estopped or otherwise limited or restricted for purposes of its infringement contentions or its claim constructions by the claim charts that it provides with this Complaint. Ocean Semiconductor intends the claim chart (Exhibits J and K) for the '402 patent to satisfy the notice requirements of Rule 8(a)(2) of the Federal Rule of Civil Procedure. The claim chart is not Ocean Semiconductor's preliminary or final infringement contentions or preliminary or final claim construction positions.

### **COUNT III: INFRINGEMENT OF THE '305 PATENT**

123. Ocean Semiconductor repeats and re-alleges the allegations of the above paragraphs as if fully set forth herein.

124. At least as of October 15, 2020, Ocean Semiconductor placed Infineon on actual notice of the '305 patent and actual notice that its actions constituted and continued to constitute infringement of the '305 patent. Infineon has had actual knowledge of the '305 patent and its own infringement of the '305 patent since at least that time.



125. On information and belief, Infineon has directly infringed and continues to infringe at least claim 1 of the '305 patent literally or under the doctrine of equivalents, by making, using, selling, or offering for sale within the United States, or importing into the United States, without authority or license, integrated circuits designed, developed, fabricated, and/or manufactured using the Applied Materials SmartFactory system and/or Infineon's in-house/proprietary scheduling and dispatching system and/or similar third-party scheduling platform hardware and/or software (e.g., with similar technical and functional features), and systems, products, and/or devices containing these integrated circuits including at least the Infineon Scheduling Products ("305 Accused Products") in violation of 35 U.S.C. § 271(a). The '305 Accused Products are manufactured by a process including all of the limitations of at least claim 1 of the '305 patent. Each such product includes an integrated circuit fabricated or manufactured using, for example, the Applied Materials SmartFactory system and/or Infineon's own in-house/proprietary scheduling and dispatching system.

126. Discovery is expected to uncover the full extent of Infineon's infringement of the '305 patent beyond the '305 Accused Products already identified herein.

127. On information and belief, Infineon has directly infringed and continues to infringe at least claim 1 of the '305 patent literally or under the doctrine of equivalents, by importing into the United States, and/or using, and/or selling, and/or offering for sale in the United States, without authority or license, the '305 Accused Products, in violation of 35 U.S.C. § 271(g). On information and belief, Infineon imports the '305 Accused Products into the United States for sales and distribution to customers located in the United States. On information and belief, Infineon sells and/or offers for sale the '305 Accused Products in the United States. For example, Infineon provides direct sales through its own sales channels and/or

its distributors or contract manufacturers and sells the '305 Accused Products to businesses including original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales of the '305 Accused Products in the United States. On information and belief, Infineon offers the '305 Accused Products for sale in the United States. For example, Infineon engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

128. The '305 Accused Products are manufactured by a process including all of the limitations of at least claim 1 of the '305 patent. The '305 Accused Products are made by a claimed method. Each is an integrated circuit fabricated or manufactured using, for example, the Applied Materials SmartFactory system and/or Infineon's in-house/proprietary scheduling and dispatching system. For example, during the manufacture of the '305 Accused Products (e.g., by the Applied Material SmartFactory system and/or Infineon's in-house/proprietary scheduling and dispatching system and/or similar third party scheduling and dispatching systems (e.g., with similar technical and functional features)), an occurrence of a predetermined event is detected in a process flow and a software scheduling agent is notified of the occurrence. An action is reactively scheduled from the software scheduling agent responsive to the detection of the predetermined event. An appointment is proactively scheduled with which the predetermined event is associated. On information and belief, as to the Applied Material SmartFactory system, Infineon, directly or through one of its Foundry Partners (e.g., UMC), contracted with Applied Materials to use this process to design, develop, or manufacture the '305 Accused Products.

129. Attached hereto as Exhibits L and M, and incorporated by reference herein, are claim charts detailing how each of the '305 Accused Products, manufactured using the Applied Materials SmartFactory system by an Infineon Foundry Partner on behalf of Infineon (e.g.,

UMC) and/or Infineon's in-house/proprietary scheduling and dispatching system at Infineon's own manufacturing facilities, satisfies each element of at least claim 1 of the '305 patent, literally or under the doctrine of equivalents.

130. On information and belief, the '305 Accused Products are neither materially changed by subsequent processes nor become trivial and nonessential components of another product.

131. On information and belief, at least as of October 15, 2020, Infineon has induced and continues to induce others actively, knowingly, and intentionally, including its suppliers and contract manufacturers, to infringe one or more claims of the '305 patent, including, but not limited to, claim 1, pursuant to 35 U.S.C. § 271(b), by actively encouraging others to import into the United States, and/or make, use, sell, and/or offer to sell in the United States, the '305 Accused Products or products containing the infringing semiconductor components of the '305 Accused Products, by actively inducing others to infringe the '305 patent by making, using, selling, offering for sale, marketing, advertising, and/or importing the Accused Products to their customers for use in downstream products that infringe, or were manufactured using processes that infringe, the '305 patent, and by instructing others to infringe the '305 patent.

132. For example, Infineon actively promotes the sale, use, and importation of the '305 Accused Products in marketing materials, technical specifications, Newsletter4Engineers publication, web pages on its website (e.g., [www.infineon.com](http://www.infineon.com)), press releases, as well as at trade shows (e.g., the Sensor + Test Trade Fair and Mobile World Congress) and through its sales and distribution channels that encourage infringing uses, sales, offers to sell, and importation of the '305 Accused Products. On information and belief, Infineon supplies customers with '305 Accused Products so that they may be used, sold, or offered for sale by

those customers. For example, Infineon provides direct sales to original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales to customers in the United States. Infineon additionally provides a wide range of technical support to customers and businesses, including product-specific solutions (*see, e.g.*, <https://www.infineon.com/cms/en/about-infineon/company/contacts/support/>) and community forums (*e.g.*, <https://www.infineonforums.com/>). Infineon also promotes, publicly on its website, uses of the '305 Accused Products by customers in the United States.

133. On information and belief, Infineon sells or offers for sale the '305 Accused Products to third parties that incorporate the '305 Accused Products into third party products ("the '305 Third Party Products").

134. On information and belief, Infineon assists third parties, directly and/or through intermediaries, in the development and manufacture of the '305 Third Party Products and provides technical support and supports the sales of the '305 Third Party Products.

135. On information and belief, at least as of October 15, 2020, Infineon has induced and continues to induce third parties with specific intent or willful blindness to import, make, use, sell, and/or offer to sell '305 Third Party Products that include at least one '305 Accused Product fabricated or manufactured using the Applied Materials SmartFactory system, and/or Infineon's in-house/proprietary scheduling and dispatching system, and/or similar systems (*e.g.*, with similar technical and functional features), whose make, use, sale, offer for sale, or importation constitutes direct infringement of at least one claim of the '305 patent.

136. On information and belief, the '305 Third Party Products are imported into the United States for use, sale, and/or offer for sale in this District and throughout the United States ("Imported '305 Third Party Products").

137. On information and belief, to the extent any entity other than Infineon, including but not limited to any of Infineon's Foundry Partners or third-party importers, imports the '305 Accused Products or Imported '305 Third-Party Products into the United States for or on behalf of Infineon ("Third Party Importer"), Infineon is liable for inducement of the Third Party Importer to infringe one or more claims of the '305 patent, including but not limited to, claim 1, pursuant to 35 U.S.C. § 271(b). Infineon has encouraged the Third Party Importer to infringe the '305 patent and intended that it do so. This encouragement includes at least ordering or instructing the Third Party Importer to import the '305 Accused Products and/or '305 Third Party Products into the United States, providing directions and other materials to the Third Party Importer to enable such importation, and conditioning the receipt of benefits (included but not limited to payment) to the Third Party Importer on such importation. On information and belief, this behavior has continued since Infineon first became aware of the '305 patent and the infringement thereof.

138. On information and belief, to the extent any entity other than Infineon, including but not limited to any of Infineon's Foundry Partners, uses the patented method to fabricate or manufacture the '305 Accused Products or Imported '305 Third-Party Products in the United States for or on behalf of Infineon ("Third Party Manufacturer"), Infineon is liable for inducement of infringement by the Third Party Manufacturer. Infineon has encouraged the Third Party Manufacturer to infringe the '305 patent and intended that it do so. This encouragement includes, without limitation, ordering the '305 Accused Products from the Third Party Manufacturer since Infineon first became aware of the '305 patent and its infringement by the Third Party Manufacturer.

139. Infineon has benefitted and continues to benefit from the importation into the United States of the '305 Accused Products, '305 Third Party Products, and Imported '305 Third Party Products.

140. Ocean Semiconductor has suffered, and continues to suffer, damages as a result of Infineon's infringement of the '305 patent.

141. Infineon has continued to infringe the '305 patent since at least October 15, 2020, despite being on notice of the '305 patent and its infringement. Infineon has therefore infringed the '305 patent knowingly, willfully, deliberately, and in disregard of Plaintiff's patent rights since at least October 15, 2020, at least by performing acts of infringement with actual knowledge of its direct and indirect infringement or while remaining willfully blind to the fact of its direct and indirect infringement. As a result of at least this conduct, Plaintiff is entitled to enhanced damages under 35 U.S.C. § 284 and to attorneys' fees and costs under 35 U.S.C. § 285.

142. Ocean Semiconductor reserves the right to modify its infringement theories as discovery progresses in this case. Ocean Semiconductor shall not be estopped or otherwise limited or restricted for purposes of its infringement contentions or its claim constructions by the claim charts that it provides with this Complaint. Ocean Semiconductor intends the claim charts (Exhibits L and M) for the '305 patent to satisfy the notice requirements of Rule 8(a)(2) of the Federal Rule of Civil Procedure. The claim chart is not Ocean Semiconductor's preliminary or final infringement contentions or preliminary or final claim construction positions

#### **COUNT IV: INFRINGEMENT OF THE '248 PATENT**

143. Ocean Semiconductor repeats and re-alleges the allegations of the above paragraphs as if fully set forth herein.

144. At least as of October 15, 2020, Ocean Semiconductor placed Infineon on actual notice of the '248 patent and actual notice that its actions constituted and continued to constitute infringement of the '248 patent. Infineon has had actual knowledge of the '248 patent and its own infringement of the '248 patent since at least that time.

145. On information and belief, Infineon has directly infringed and continues to infringe at least claim 1 of the '248 patent literally or under the doctrine of equivalents, by making, using, selling, or offering for sale within the United States, or importing into the United States, without authority or license, integrated circuits designed, developed, fabricated, and/or manufactured using the Applied Materials SmartFactory system and/or Infineon's in-house/proprietary scheduling and dispatching system and/or similar third-party scheduling platform hardware and/or software (e.g., with similar technical and functional features), and systems, products, and/or devices containing these integrated circuits including at least the Infineon Scheduling Products ("248 Accused Products") in violation of 35 U.S.C. § 271(a). The '248 Accused Products are manufactured by a process including all of the limitations of at least claim 1 of the '248 patent. Each such product includes an integrated circuit fabricated or manufactured using, for example, the Applied Materials SmartFactory system and/or Infineon's own in-house/proprietary scheduling and dispatching system.

146. Discovery is expected to uncover the full extent of Infineon's infringement of the '248 patent beyond the '248 Accused Products already identified herein.

147. On information and belief, Infineon has directly infringed and continues to infringe at least claim 1 of the '248 patent literally or under the doctrine of equivalents, by importing into the United States, and/or using, and/or selling, and/or offering for sale in the United States, without authority or license, the '248 Accused Products, in violation of 35 U.S.C.

§ 271(g). On information and belief, Infineon imports the '248 Accused Products into the United States for sales and distribution to customers located in the United States. On information and belief, Infineon sells and/or offers for sale the '248 Accused Products in the United States. For example, Infineon provides direct sales through its own sales channels and/or its distributors or contract manufacturers and sells the '248 Accused Products to businesses including original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales of the '248 Accused Products in the United States. On information and belief, Infineon offers the '248 Accused Products for sale in the United States. For example, Infineon engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

148. The '248 Accused Products are manufactured by a process including all of the limitations of at least claim 1 of the '248 patent. The '248 Accused Products are made by a claimed method. Each is an integrated circuit fabricated or manufactured using, for example, the Applied Materials SmartFactory system and/or Infineon's own in-house/proprietary scheduling and dispatching system. For example, during the manufacture of the '248 Accused Products (e.g., by the Applied Material SmartFactory system and/or Infineon's in-house/proprietary scheduling and dispatching system or similar third party scheduling and dispatching systems (e.g., with similar technical and functional features)), an occurrence of a predetermined event is automatically detected in an integrated, automated process flow. A software scheduling agent is automatically notified of the occurrence; and an action is reactively scheduled from the software scheduling agent responsive to the detection of the predetermined event. An appointment is proactively scheduled with which the predetermined event is associated, including proactively scheduling the appointment from the software scheduling agent. On information and belief, as to



the Applied Material SmartFactory system, Infineon, directly or through one of its Foundry Partners (e.g., UMC), contracted with Applied Materials to use this process to design, develop, or manufacture the '248 Accused Products.

149. Attached hereto as Exhibits N and O, and incorporated by reference herein, are claim charts detailing how each of the '248 Accused Products, manufactured using the Applied Materials SmartFactory system by an Infineon Foundry Partner on behalf of Infineon (e.g., UMC) and/or Infineon's in-house/proprietary scheduling and dispatching system at Infineon's own manufacturing facilities, satisfies each element of at least claim 1 of the '248 patent, literally or under the doctrine of equivalents.

150. On information and belief, the '248 Accused Products are neither materially changed by subsequent processes nor become trivial and nonessential components of another product.

151. On information and belief, at least as of October 15, 2020, Infineon has induced and continues to induce others actively, knowingly, and intentionally, including its suppliers and contract manufacturers, to infringe one or more claims of the '248 patent, including, but not limited to, claim 1, pursuant to 35 U.S.C. § 271(b), by actively encouraging others to import into the United States, and/or make, use, sell, and/or offer to sell in the United States, the '248 Accused Products or products containing the infringing semiconductor components of the '248 Accused Products, by actively inducing others to infringe the '248 patent by making, using, selling, offering for sale, marketing, advertising, and/or importing the Accused Products to their customers for use in downstream products that infringe, or were manufactured using processes that infringe, the '248 patent, and by instructing others to infringe the '248 patent.

152. For example, Infineon actively promotes the sale, use, and importation of the '248 Accused Products in marketing materials, technical specifications, Newsletter4Engineers publication, web pages on its website (e.g., [www.infineon.com](http://www.infineon.com)), press releases, as well as at trade shows (e.g., the Sensor + Test Trade Fair and Mobile World Congress) and through its sales and distribution channels that encourage infringing uses, sales, offers to sell, and importation of the '248 Accused Products. On information and belief, Infineon supplies customers with '248 Accused Products so that they may be used, sold, or offered for sale by those customers. For example, Infineon provides direct sales to original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales to customers in the United States. Infineon additionally provides a wide range of technical support to customers and businesses, including product-specific solutions (see, e.g., <https://www.infineon.com/cms/en/about-infineon/company/contacts/support/>) and community forums (e.g., <https://www.infineonforums.com/>). Infineon also promotes, publicly on its website, uses of the '248 Accused Products by customers in the United States.

153. On information and belief, Infineon sells or offers for sale the '248 Accused Products to third parties that incorporate the '248 Accused Products into third party products ("the '248 Third Party Products").

154. On information and belief, Infineon assists third parties, directly and/or through intermediaries, in the development and manufacture of the '248 Third Party Products and provides technical support and supports the sales of the '248 Third Party Products.

155. On information and belief, at least as of October 15, 2020, Infineon has induced and continues to induce third parties with specific intent or willful blindness to import, make, use, sell, and/or offer to sell '248 Third Party Products that include at least one '248 Accused

Product fabricated or manufactured using the Applied Materials SmartFactory system, and/or Infineon's in-house/proprietary scheduling and dispatching system, and/or similar systems (e.g., with similar technical and functional features), whose make, use, sale, offer for sale, or importation constitutes direct infringement of at least one claim of the '248 patent.

156. On information and belief, the '248 Third Party Products are imported into the United States for use, sale, and/or offer for sale in this District and throughout the United States ("Imported '248 Third Party Products").

157. On information and belief, to the extent any entity other than Infineon, including but not limited to any of Infineon's Foundry Partners or third-party importers, imports the '248 Accused Products or Imported '248 Third-Party Products into the United States for or on behalf of Infineon ("Third Party Importer"), Infineon is liable for inducement of the Third Party Importer to infringe one or more claims of the '248 patent, including but not limited to, claim 1, pursuant to 35 U.S.C. § 271(b). Infineon has encouraged the Third Party Importer to infringe the '248 patent and intended that it do so. This encouragement includes at least ordering or instructing the Third Party Importer to import the '248 Accused Products and/or '248 Third Party Products into the United States, providing directions and other materials to the Third Party Importer to enable such importation, and conditioning the receipt of benefits (included but not limited to payment) to the Third Party Importer on such importation. On information and belief, this behavior has continued since Infineon first became aware of the '248 patent and the infringement thereof.

158. On information and belief, to the extent any entity other than Infineon, including but not limited to any of Infineon's Foundry Partners, uses the patented method to fabricate or manufacture the '248 Accused Products or Imported '248 Third-Party Products in the United

States for or on behalf of Infineon (“Third Party Manufacturer”), Infineon is liable for inducement of infringement by the Third Party Manufacturer. Infineon has encouraged the Third Party Manufacturer to infringe the ’248 patent and intended that it do so. This encouragement includes, without limitation, ordering the ’248 Accused Products from the Third Party Manufacturer since Infineon first became aware of the ’248 patent and its infringement by the Third Party Manufacturer.

159. Infineon has benefitted and continues to benefit from the importation into the United States of the ’248 Accused Products, ’248 Third Party Products, and Imported ’248 Third Party Products.

160. Ocean Semiconductor has suffered, and continues to suffer, damages as a result of Infineon’s infringement of the ’248 patent.

161. Infineon has continued to infringe the ’248 patent since at least October 15, 2020, despite being on notice of the ’248 patent and its infringement. Infineon has therefore infringed the ’248 patent knowingly, willfully, deliberately, and in disregard of Plaintiff’s patent rights since at least October 15, 2020, at least by performing acts of infringement with actual knowledge of its direct and indirect infringement or while remaining willfully blind to the fact of its direct and indirect infringement. As a result of at least this conduct, Plaintiff is entitled to enhanced damages under 35 U.S.C. § 284 and to attorneys’ fees and costs under 35 U.S.C. § 285.

162. Ocean Semiconductor reserves the right to modify its infringement theories as discovery progresses in this case. Ocean Semiconductor shall not be estopped or otherwise limited or restricted for purposes of its infringement contentions or its claim constructions by the claim charts that it provides with this Complaint. Ocean Semiconductor intends the claim charts (Exhibits N and O) for the ’248 patent to satisfy the notice requirements of Rule 8(a)(2) of the

Federal Rule of Civil Procedure. The claim chart is not Ocean Semiconductor's preliminary or final infringement contentions or preliminary or final claim construction positions.

**COUNT V: INFRINGEMENT OF THE '097 PATENT**

163. Ocean Semiconductor repeats and re-alleges the allegations of the above paragraphs as if fully set forth herein.

164. At least as of November 25, 2020, Ocean Semiconductor placed Infineon on actual notice of the '097 patent and actual notice that its actions constituted and continued to constitute infringement of the '097 patent. Infineon has had actual knowledge of the '097 patent and its own infringement of the '097 patent since at least that time.

165. On information and belief, Defendant Infineon has directly infringed and continues to infringe at least claim 1 of the '097 patent literally or under the doctrine of equivalents, by making, using, selling, or offering for sale within the United States, or importing into the United States, without authority or license, integrated circuits formed with circuit structures having linewidths that are smaller than what is achievable by conventional UV lithographic techniques on ultra-thin resist layers, and systems, products, and/or devices containing these integrated circuits including at least the Infineon Sub-30nm Products ("097 Accused Products") in violation of 35 U.S.C. § 271(a). The '097 Accused Products are manufactured by a process including all of the limitations of at least claim 1 of the '097 patent. Each such product includes an integrated circuit formed with circuit structures having linewidths that are smaller than what is achievable by conventional UV lithographic techniques on ultra-thin resist layers.

166. Discovery is expected to uncover the full extent of Infineon's infringement of the '097 patent beyond the '097 Accused Products already identified herein.

167. On information and belief, Infineon also has directly infringed and continues to infringe at least claim 1 of the '097 patent literally or under the doctrine of equivalents, by importing into the United States, and/or using, and/or selling, and/or offering for sale in the United States, without authority or license, the '097 Accused Products, in violation of 35 U.S.C. § 271(g). On information and belief, Infineon imports the '097 Accused Products into the United States for sales and distribution to customers located in the United States. On information and belief, Infineon sells and/or offers for sale the '097 Accused Products in the United States. For example, Infineon provides direct sales through its own sales channels and/or its distributors or contract manufacturers and sells the '097 Accused Products to businesses including original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales of the '097 Accused Products in the United States. On information and belief, Infineon offers the '097 Accused Products for sale in the United States. For example, Infineon engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

168. The '097 Accused Products are manufactured by a process including all of the limitations of at least claim 1 of the '097 patent. The '097 Accused Products are made by a claimed method. Each is a semiconductor device formed with circuit structures having linewidths that are smaller than what is achievable by conventional UV lithographic techniques on ultra-thin resist layers (e.g., with similar technical and functional features).

169. For example, during the manufacture of the '097 Accused Products, a semiconductor wafer stack formed of a substrate and a device layer above the substrate is provided. A hardmask layer is deposited over the device layer and an ultra-thin resist layer is deposited over the hardmask layer. A resist mask having an initial linewidth is formed, with the

exposed portions of the hardmask layer anisotropically etched. The hardmask layer underneath the resist mask is isotropically etched subsequently to form a hardmask having a final linewidth which is narrower than the initial line width of the resist mask and corresponds to a desired structure linewidth. Then, the device layer as defined by the hardmask is anisotropically etched to form a structure having a width substantially equal to the final linewidth of the hardmask. On information and belief, Infineon uses this process to design, develop, or manufacture the '097 Accused Products.

170. Attached hereto as Exhibit P, and incorporated by reference herein, is a claim chart detailing how each of the '097 Accused Products is formed with circuit structures having linewidths that are smaller than what is achievable by conventional UV lithographic techniques on ultra-thin resist layers by Infineon that satisfies each element of at least claim 1 of the '097 patent, literally or under the doctrine of equivalents.

171. On information and belief, the '097 Accused Products are neither materially changed by subsequent processes nor become trivial and nonessential components of another product.

172. On information and belief, at least as of November 25, 2020, Infineon has induced and continues to induce others actively, knowingly, and intentionally, including its suppliers and contract manufacturers, to infringe one or more claims of the '097 patent, including, but not limited to, claim 1, pursuant to 35 U.S.C. § 271(b), by actively encouraging others to import into the United States, and/or make, use, sell, and/or offer to sell in the United States, the '097 Accused Products or products containing the infringing semiconductor components of the '097 Accused Products, by actively inducing others to infringe the '097 patent by making, using, selling, offering for sale, marketing, advertising, and/or importing the Accused Products to their

customers for use in downstream products that infringe, or were manufactured using processes that infringe, the '097 patent, and by instructing others to infringe the '097 patent.

173. For example, Infineon actively promotes the sale, use, and importation of the '097 Accused Products in marketing materials, technical specifications, Newsletter4Engineers publication, web pages on its website (e.g., [www.infineon.com](http://www.infineon.com)), press releases, as well as at trade shows (e.g., the Sensor + Test Trade Fair and Mobile World Congress) and through its sales and distribution channels that encourage infringing uses, sales, offers to sell, and importation of the '097 Accused Products. On information and belief, Infineon supplies customers with '097 Accused Products so that they may be used, sold, or offered for sale by those customers. For example, Infineon provides direct sales to original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales to customers in the United States. Infineon additionally provides a wide range of technical support to customers and businesses, including product-specific solutions (*see, e.g.*, <https://www.infineon.com/cms/en/about-infineon/company/contacts/support/>) and community forums (e.g., <https://www.infineonforums.com/>). Infineon also promotes, publicly on its website, uses of the '097 Accused Products by customers in the United States.

174. On information and belief, Infineon sells or offers for sale the '097 Accused Products to third parties that incorporate the '097 Accused Products into third party products ("the '097 Third Party Products").

175. On information and belief, Infineon assists third parties, directly and/or through intermediaries, in the development and manufacture of the '097 Third Party Products and provides technical support and supports the sales of the '097 Third Party Products.



176. On information and belief, at least as of November 25, 2020, Infineon has induced and continues to induce third parties with specific intent or willful blindness to import, make, use, sell, and/or offer to sell '097 Third Party Products that include at least one '097 Accused Product formed with circuit structures having linewidths that are smaller than what is achievable by conventional UV lithographic techniques on ultra-thin resist layers), or similar systems (e.g., with similar technical and functional features), whose make, use, sale, offer for sale, or importation constitutes direct infringement of at least one claim of the '097 patent.

177. On information and belief, the '097 Third Party Products are imported into the United States for use, sale, and/or offer for sale in this District and throughout the United States ("Imported '097 Third Party Products").

178. On information and belief, to the extent any entity other than Infineon, including but not limited to any of Infineon's Foundry Partners or third-party importers, imports the '097 Accused Products or Imported '097 Third-Party Products into the United States for or on behalf of Infineon ("Third Party Importer"), Infineon is liable for inducement of the Third Party Importer to infringe one or more claims of the '097 patent, including but not limited to, claim 1, pursuant to 35 U.S.C. § 271(b). Infineon has encouraged the Third Party Importer to infringe the '097 patent and intended that it do so. This encouragement includes at least ordering or instructing the Third Party Importer to import the '097 Accused Products and/or '097 Third-Party Products into the United States, providing directions and other materials to the Third Party Importer to enable such importation, and conditioning the receipt of benefits (included but not limited to payment) to the Third Party Importer on such importation. On information and belief, this behavior has continued since Infineon first became aware of the '097 patent and the infringement thereof.

179. On information and belief, to the extent any entity other than Infineon, including but not limited to any of Infineon's Foundry Partners, uses the patented method to fabricate or manufacture the '097 Accused Products or Imported '097 Third-Party Products in the United States for or on behalf of Infineon ("Third Party Manufacturer"), Infineon is liable for inducement of infringement by the Third Party Manufacturer. Infineon has encouraged the Third Party Manufacturer to infringe the '097 patent and intended that it do so. This encouragement includes, without limitation, ordering the '097 Accused Products from the Third Party Manufacturer since Infineon first became aware of the '097 patent and its infringement by the Third Party Manufacturer.

180. Infineon has benefitted and continues to benefit from the importation into the United States of the '097 Accused Products, '097 Third Party Products, and Imported '097 Third Party Products.

181. Ocean Semiconductor has suffered, and continues to suffer, damages as a result of Infineon's infringement of the '097 patent.

182. Infineon has continued to infringe the '097 patent since at least November 25, 2020, despite being on notice of the '097 patent and its infringement. Infineon has therefore infringed the '097 patent knowingly, willfully, deliberately, and in disregard of Plaintiff's patent rights since at least November 25, 2020, at least by performing acts of infringement with actual knowledge of its direct and indirect infringement or while remaining willfully blind to the fact of its direct and indirect infringement. As a result of at least this conduct, Plaintiff is entitled to enhanced damages under 35 U.S.C. § 284 and to attorneys' fees and costs under 35 U.S.C. § 285.

183. Ocean Semiconductor reserves the right to modify its infringement theories as discovery progresses in this case. Ocean Semiconductor shall not be estopped or otherwise

limited or restricted for purposes of its infringement contentions or its claim constructions by the claim charts that it provides with this Complaint. Ocean Semiconductor intends the claim chart (Exhibit P) for the '097 patent to satisfy the notice requirements of Rule 8(a)(2) of the Federal Rule of Civil Procedure. The claim chart is not Ocean Semiconductor's preliminary or final infringement contentions or preliminary or final claim construction positions.

#### **COUNT VI: INFRINGEMENT OF THE '330 PATENT**

184. Ocean Semiconductor repeats and re-alleges the allegations of the above paragraphs as if fully set forth herein.

185. At least as of November 25, 2020, Ocean Semiconductor placed Infineon on actual notice of the '330 patent and actual notice that its actions constituted and continued to constitute infringement of the '330 patent. Infineon has had actual knowledge of the '330 patent and its own infringement of the '330 patent since at least that time.

186. On information and belief, Infineon has directly infringed and continues to infringe at least claim 19 of the '330 patent literally or under the doctrine of equivalents, by making, using, selling, or offering for sale within the United States, or importing into the United States, without authority or license, integrated circuits designed, developed, fabricated, and/or manufactured using the ASML YieldStar metrology and inspection system or platform, and systems, products, and/or devices containing these integrated circuits including at least the Infineon YieldStar Products ("330 Accused Products") in violation of 35 U.S.C. § 271(a). The '330 Accused Products are manufactured by a process including all of the limitations of at least claim 19 of the '330 patent. Each such product includes an integrated circuit fabricated or manufactured using, for example, the ASML YieldStar metrology and inspection system hardware and software.

187. Discovery is expected to uncover the full extent of Infineon's infringement of the '330 patent beyond the '330 Accused Products already identified herein.

188. On information and belief, Infineon has directly infringed and continues to infringe at least claim 19 of the '330 patent literally or under the doctrine of equivalents, by importing into the United States, and/or using, and/or selling, and/or offering for sale in the United States, without authority or license, the '330 Accused Products, in violation of 35 U.S.C. § 271(g). On information and belief, Infineon imports the '330 Accused Products into the United States for sales and distribution to customers located in the United States. On information and belief, Infineon sells and/or offers for sale the '330 Accused Products in the United States. For example, Infineon provides direct sales through its own sales channels and/or its distributors or contract manufacturers and sells the '330 Accused Products to businesses including original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales of the '330 Accused Products in the United States. On information and belief, Infineon offers the '330 Accused Products for sale in the United States. For example, Infineon engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

189. The '330 Accused Products are manufactured by a process including all of the limitations of at least claim 19 of the '330 patent. The '330 Accused Products are made by a claimed method. Each is an integrated circuit fabricated or manufactured using, for example, ASML's YieldStar metrology and inspection system hardware and software.

190. For example, during the manufacture of the '330 Accused Products, a plurality of wafers undergoing the fabrication process is provided. The plurality of wafers are mapped into one or more logical grids comprising one or more portions in which a grating structure for use in

concurrent measurements is formed. Concurrently, one or more critical dimensions and overlay in a wafer undergoing the fabrication process are measured. It is determined if one or more of the critical dimensions are outside of acceptable tolerances, and whether an overlay error is occurring. Control data based upon one or more concurrent measurements is developed when at least one of an overlay error is occurring and one or more of the critical dimensions fall outside of acceptable tolerances. The control data is fed forward or backward to adjust one or more fabrication components or one or more operating parameters associated with the fabrication components when at least one of an overlay error is occurring and one or more of the critical dimensions fall outside of acceptable tolerances to mitigate overlay error and/or to bring critical dimension within acceptable tolerances. On information and belief, Infineon, directly or through one of its Foundry Partners (e.g., TSMC), contracted with ASML to use this process to design, develop, or manufacture the '330 Accused Products.

191. Attached hereto as Exhibit Q, and incorporated by reference herein, is a claim chart detailing how each of the '330 Accused Products, manufactured using the ASML YieldStar metrology and inspection system or platform by a Infineon Foundry Partner on behalf of Infineon (e.g., TSMC) or Infineon (to the extent that the ASML YieldStar metrology and inspection system hardware and software is used at Infineon's own manufacturing facilities), satisfies each element of at least independent claim 19 of the '330 patent, literally or under the doctrine of equivalents.

192. On information and belief, the '330 Accused Products are neither materially changed by subsequent processes nor become trivial and nonessential components of another product.

193. On information and belief, at least as of November 25, 2020, Infineon has induced and continues to induce others, including its suppliers and contract manufacturers, to infringe one or more claims of the '330 patent, including, but not limited to, claim 19, pursuant to 35 U.S.C. § 271(b), by actively encouraging others to import into the United States, and/or make, use, sell, and/or offer to sell in the United States, the '330 Accused Products or products containing the infringing semiconductor components of the '330 Accused Products, by actively inducing others to infringe the '330 patent by making, using, selling, offering for sale, marketing, advertising, and/or importing the Accused Products to their customers for use in downstream products that infringe, or were manufactured using processes that infringe, the '330 patent, and by instructing others to infringe the '330 patent.

194. For example, Infineon actively promotes the sale, use, and importation of the '330 Accused Products in marketing materials, technical specifications, Newsletter4Engineers publication, web pages on its website (e.g., [www.infineon.com](http://www.infineon.com)), press releases, as well as at trade shows (e.g., the Sensor + Test Trade Fair and Mobile World Congress) and through its sales and distribution channels that encourage infringing uses, sales, offers to sell, and importation of the '330 Accused Products. On information and belief, Infineon supplies customers with '330 Accused Products so that they may be used, sold, or offered for sale by those customers. For example, Infineon provides direct sales to original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales to customers in the United States. Infineon additionally provides a wide range of technical support to customers and businesses, including product-specific solutions (*see, e.g.*, <https://www.infineon.com/cms/en/about-infineon/company/contacts/support/>) and

community forums (e.g., <https://www.infineonforums.com/>). Infineon also promotes, publicly on its website, uses of the '330 Accused Products by customers in the United States.

195. On information and belief, Infineon sells or offers for sale the '330 Accused Products to third parties that incorporate the '330 Accused Products into third party products ("the '330 Third Party Products").

196. On information and belief, Infineon assists third parties, directly and/or through intermediaries, in the development of the '330 Third Party Products and provides technical support and supports the sales of the '330 Third Party Products.

197. On information and belief, at least as of November 25, 2020, Infineon has induced and continues to induce third parties with specific intent or willful blindness to import, make, use, sell, and/or offer to sell '330 Third Party Products that include at least one '330 Accused Product fabricated or manufactured using the ASML YieldStar metrology and inspection system or platform, or similar systems (e.g., with similar technical and functional features), whose make, use, sale, offer for sale, or importation constitutes direct infringement of at least one claim of the '330 patent.

198. On information and belief, the '330 Third Party Products are imported into the United States for use, sale, and/or offer for sale in this District and throughout the United States ("Imported '330 Third Party Products").

199. On information and belief, to the extent any entity other than Infineon, including but not limited to any of Infineon's Foundry Partners or third-party importers, imports the '330 Accused Products and/or Imported '330 Third-Party Products into the United States for or on behalf of Infineon ("Third Party Importer"), Infineon is liable for inducement of infringement by the Third Party Importer. Infineon has encouraged the Third Party Importer to infringe the '330

patent and intended that it do so. This encouragement includes at least ordering or instructing the Third Party Importer to import the '330 Accused Products and/or '330 Third-Party Products into the United States, providing directions and other materials to the Third Party Importer to enable such importation, and/or conditioning the receipt of benefits (included but not limited to payment) to the Third Party Importer on such importation. On information and belief, this behavior has continued since Defendant first became aware of the '330 patent and the infringement thereof.

200. On information and belief, to the extent any entity other than Infineon, including but not limited to any of Infineon's Foundry Partners, uses the patented method to fabricate or manufacture the '330 Accused Products and/or Imported '330 Third-Party Products in the United States for or on behalf of Infineon ("Third Party Manufacturer"), Infineon is liable for inducement of infringement by the Third Party Manufacturer. Infineon has encouraged the Third Party Manufacturer to infringe the '330 patent and intended that it do so. This encouragement includes, without limitation, ordering the '330 Accused Products from the Third Party Manufacturer since Defendant first became aware of the '330 patent and its infringement by the Third Party Manufacturer.

201. Infineon has benefitted and continues to benefit from the importation into the United States of the '330 Accused Products, '330 Third Party Products, and Imported '330 Third Party Products.

202. Ocean Semiconductor has suffered, and continues to suffer, damages as a result of Infineon's infringement of the '330 patent.

203. Infineon has continued to infringe the '330 patent since at least November 25, 2020, despite being on notice of the '330 patent and its infringement. Infineon has therefore



infringed the '330 patent knowingly, willfully, deliberately, and in disregard of Plaintiff's patent rights since at least November 25, 2020, at least by performing acts of infringement with actual knowledge of its direct and indirect infringement or while remaining willfully blind to the fact of its direct and indirect infringement. As a result of at least this conduct, Plaintiff is entitled to enhanced damages under 35 U.S.C. § 284 and to attorneys' fees and costs under 35 U.S.C. § 285.

204. Ocean Semiconductor reserves the right to modify its infringement theories as discovery progresses in this case. Ocean Semiconductor shall not be estopped or otherwise limited or restricted for purposes of its infringement contentions or its claim constructions by the claim charts that it provides with this Complaint. Ocean Semiconductor intends for the claim chart (Exhibit Q) for the '330 patent to satisfy the notice requirements of Rule 8(a)(2) of the Federal Rule of Civil Procedure. The claim chart is not Ocean Semiconductor's preliminary or final infringement contentions or preliminary or final claim construction positions.

#### **COUNT VII: INFRINGEMENT OF THE '691 PATENT**

205. Ocean Semiconductor repeats and re-alleges the allegations of the above paragraphs as if fully set forth herein.

206. At least as of November 25, 2020, Ocean Semiconductor placed Infineon on actual notice of the '691 patent and actual notice that its actions constituted and continued to constitute infringement of the '691 patent. Infineon has had actual knowledge of the '691 patent and its own infringement of the '691 patent since at least that time.

207. On information and belief, Infineon has directly infringed and continues to infringe at least claim 1 of the '691 patent literally or under the doctrine of equivalents, by making, using, selling, or offering for sale within the United States, or importing into the United States, without authority or license, integrated circuits designed, developed, fabricated, and/or

manufactured using the Applied Materials E3 system, and/or the PDF Solution Exensio system, or similar systems (e.g., with similar technical and functional features), and systems, products, and/or devices containing these integrated circuits including at least the Infineon APC Products (“’691 Accused Products”) in violation of 35 U.S.C. § 271(a). The ’691 Accused Products are manufactured by a process including all of the limitations of at least claim 1 of the ’691 patent. Each such product includes an integrated circuit fabricated or manufactured using, for example, the Applied Materials E3 system and/or the PDF Solution Exensio system.

208. Discovery is expected to uncover the full extent of Infineon’s infringement of the ’691 patent beyond the ’691 Accused Products already identified herein.

209. On information and belief, Infineon has directly infringed and continues to infringe at least claim 1 of the ’691 patent literally or under the doctrine of equivalents, by importing into the United States, and/or using, and/or selling, and/or offering for sale in the United States, without authority or license, the ’691 Accused Products, in violation of 35 U.S.C. § 271(g). On information and belief, Infineon imports the ’691 Accused Products into the United States for sales and distribution to customers located in the United States. On information and belief, Infineon sells and/or offers for sale the ’691 Accused Products in the United States. For example, Infineon provides direct sales through its own sales channels and/or its distributors or contract manufacturers and sells the ’691 Accused Products to businesses including original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales of the ’691 Accused Products in the United States. On information and belief, Infineon offers the ’691 Accused Products for sale in the United States. For example, Infineon engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.

210. The '691 Accused Products are manufactured by a process including all of the limitations of at least claim 1 of the '691 patent. The '691 Accused Products are made by a claimed method. Each is an integrated circuit fabricated or manufactured using, for example, Applied Materials' E3 system and/or the PDF Solution Exensio system. For example, during the manufacture of the '691 Accused Products (e.g., by Applied Materials' E3 system and/or the PDF Solution Exensio system and/or similar systems (e.g., with similar technical and functional features)), metrology data related to the processing of workpieces in a plurality of tools is collected. Context data for the metrology data, including collection purpose data, is collected. The metrology data is filtered based on the collection purpose data. A process control activity related to one of the tools is conducted based on the filtered metrology data. On information and belief, Infineon, directly or through one of its Foundry Partners, contracted with Applied Materials and PDF Solutions to use this process to design, develop, or manufacture the '691 Accused Products.

211. Attached hereto as Exhibits R and S, and incorporated by reference herein, are claim charts detailing how each of the '691 Accused Products manufactured using the Applied Materials E3 system and/or the PDF Solution Exensio system by a Infineon Foundry Partner on behalf of Infineon (e.g., TSMC and/or UMC) or Infineon (to the extent that either or both systems are used at Infineon's own manufacturing facilities) satisfies each element of at least claim 1 of the '691 patent, literally or under the doctrine of equivalents.

212. On information and belief, the '691 Accused Products are neither materially changed by subsequent processes nor become trivial and nonessential components of another product.

213. On information and belief, at least as of November 25, 2020, Infineon has induced and continues to induce others, including its suppliers and contract manufacturers, to infringe one or more claims of the '691 patent, including, but not limited to, claim 1, pursuant to 35 U.S.C. § 271(b), by actively encouraging others to import into the United States, and/or make, use, sell, and/or offer to sell in the United States, the '691 Accused Products or products containing the infringing semiconductor components of the '691 Accused Products, by actively inducing others to infringe the '691 patent by making, using, selling, offering for sale, marketing, advertising, and/or importing the Accused Products to their customers for use in downstream products that infringe, or were manufactured using processes that infringe, the '691 patent, and by instructing others to infringe the '691 patent.

214. For example, Infineon actively promotes the sale, use, and importation of the '691 Accused Products in marketing materials, technical specifications, Newsletter4Engineers publication, web pages on its website (e.g., [www.infineon.com](http://www.infineon.com)), press releases, as well as at trade shows (e.g., the Sensor + Test Trade Fair and Mobile World Congress) and through its sales and distribution channels that encourage infringing uses, sales, offers to sell, and importation of the '691 Accused Products. On information and belief, Infineon supplies customers with '691 Accused Products so that they may be used, sold, or offered for sale by those customers. For example, Infineon provides direct sales to original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales to customers in the United States. Infineon additionally provides a wide range of technical support to customers and businesses, including product-specific solutions (*see, e.g.*, <https://www.infineon.com/cms/en/about-infineon/company/contacts/support/>) and

community forums (e.g., <https://www.infineonforums.com/>). Infineon also promotes, publicly on its website, uses of the '691 Accused Products by customers in the United States.

215. On information and belief, Infineon sells or offers for sale the '691 Accused Products to third parties that incorporate the '691 Accused Products into third party products ("the '691 Third Party Products").

216. On information and belief, Infineon assists third parties, directly and/or through intermediaries, in the development and manufacture of the '691 Third Party Products and provides technical support and supports the sales of the '691 Third Party Products.

217. On information and belief, at least as of November 25, 2020, Infineon also has induced and continues to induce third parties with specific intent or willful blindness to import, make, use, sell, and/or offer to sell '691 Third Party Products that include at least one '691 Accused Product fabricated or manufactured using the Applied Materials E3 system and/or the PDF Solution Exensio system and/or similar systems (e.g., with similar technical and functional features) whose make, use, sale, offer for sale, or importation constitutes direct infringement of at least one claim of the '691 patent.

218. On information and belief, the '691 Third Party Products are imported into the United States for use, sale, and/or offer for sale in this District and throughout the United States ("Imported '691 Third Party Products").

219. On information and belief, to the extent any entity other than Infineon, including but not limited to any of Infineon's Foundry Partners or third-party importers, imports the '691 Accused Products and/or Imported '691 Third-Party Products into the United States for or on behalf of Infineon ("Third Party Importer"), Infineon is liable for inducement of infringement by the Third Party Importer. Infineon has encouraged the Third Party Importer to infringe the '691

patent and intended that it do so. This encouragement includes at least ordering or instructing the Third Party Importer to import the '691 Accused Products and/or '691 Third-Party Products into the United States, providing directions and other materials to the Third Party Importer to enable such importation, and/or conditioning the receipt of benefits (included but not limited to payment) to the Third Party Importer on such importation. On information and belief, this behavior has continued since Defendant first became aware of the '691 patent and the infringement thereof.

220. On information and belief, to the extent any entity other than Infineon, including but not limited to any of Infineon's Foundry Partners, uses the patented method to fabricate or manufacture the '691 Accused Products and/or Imported '691 Third-Party Products in the United States for or on behalf of Infineon ("Third Party Manufacturer"), Infineon is liable for inducement of infringement by the Third Party Manufacturer. Infineon has encouraged the Third Party Manufacturer to infringe the '691 patent and intended that it do so. This encouragement includes, without limitation, ordering the '691 Accused Products from the Third Party Manufacturer since Defendant first became aware of the '691 patent and its infringement by the Third Party Manufacturer.

221. Infineon has benefitted and continues to benefit from the importation into the United States of the Imported '691 Third Party Products.

222. Ocean Semiconductor has suffered, and continues to suffer, damages as a result of Infineon's infringement of the '691 patent.

223. Infineon has continued to infringe the '691 patent since at least November 25, 2020, despite being on notice of the '691 patent and its infringement. Infineon has therefore infringed the '691 patent knowingly, willfully, deliberately, and in disregard of Plaintiff's patent

rights since at least November 25, 2020, at least by performing acts of infringement with actual knowledge of its direct and indirect infringement or while remaining willfully blind to the fact of its direct and indirect infringement. As a result of at least this conduct, Plaintiff is entitled to enhanced damages under 35 U.S.C. § 284 and to attorneys' fees and costs under 35 U.S.C. § 285.

224. Ocean Semiconductor reserves the right to modify its infringement theories as discovery progresses in this case. Ocean Semiconductor shall not be estopped or otherwise limited or restricted for purposes of its infringement contentions or its claim constructions by the claim charts that it provides with this Complaint. Ocean Semiconductor intends the claim chart (Exhibits R and S) for the '691 patent to satisfy the notice requirements of Rule 8(a)(2) of the Federal Rule of Civil Procedure. The claim chart is not Ocean Semiconductor's preliminary or final infringement contentions or preliminary or final claim construction positions.

### **COUNT VIII: INFRINGEMENT OF THE '538 PATENT**

225. Ocean Semiconductor repeats and re-alleges the allegations of the above paragraphs as if fully set forth herein.

226. At least as of November 25, 2020, Ocean Semiconductor placed Infineon on actual notice of the '538 patent and actual notice that its actions constituted and continued to constitute infringement of the '538 patent. Infineon has had actual knowledge of the '538 patent and its own infringement of the '538 patent since at least that time.

227. On information and belief, Infineon has directly infringed and continues to infringe at least claim 1 of the '538 patent literally or under the doctrine of equivalents, by making, using, selling, or offering for sale within the United States, or importing into the United States, without authority or license, integrated circuits designed, developed, fabricated, and/or manufactured using the Applied Materials E3 system, and/or the PDF Solution Exensio system,

and/or similar systems (e.g., with similar technical and functional features), and systems, products, and/or devices containing these integrated circuits including at least the Infineon APC Products (“’538 Accused Products”) in violation of 35 U.S.C. § 271(a). The ’538 Accused Products are manufactured by a process including all of the limitations of at least claim 1 of the ’538 patent. Each such product includes an integrated circuit fabricated or manufactured using, for example, the Applied Materials E3 system and/or the PDF Solution Exensio system.

228. Discovery is expected to uncover the full extent of Infineon’s infringement of the ’538 patent beyond the ’538 Accused Products already identified herein.

229. On information and belief, Infineon has directly infringed and continues to infringe at least claim 1 of the ’538 patent literally or under the doctrine of equivalents, by importing into the United States, and/or using, and/or selling, and/or offering for sale in the United States, without authority or license, the ’538 Accused Products, in violation of 35 U.S.C. § 271(g). On information and belief, Infineon imports the ’538 Accused Products into the United States for sales and distribution to customers located in the United States. On information and belief, Infineon sells and/or offers for sale the ’538 Accused Products in the United States. For example, Infineon provides direct sales through its own sales channels and/or its distributors or contract manufacturers and sells the ’538 Accused Products to businesses including original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales of the ’538 Accused Products in the United States. On information and belief, Infineon offers the ’538 Accused Products for sale in the United States. For example, Infineon engages in sales, marketing, and contracting activity in the United States and/or with United States offices of its customers.



230. The '538 Accused Products are manufactured by a process including all of the limitations of at least claim 1 of the '538 patent. The '538 Accused Products are made by a claimed method. Each is an integrated circuit fabricated or manufactured using, for example, Applied Materials' E3 system and/or the PDF Solution Exensio system. For example, during the manufacture of the '538 Accused Products (e.g., by Applied Materials' E3 system and/or the PDF Solution Exensio system and/or similar systems (e.g., with similar technical and functional features)), a computer a fault detection analysis relating to processing of a workpiece is performed. A relationship of a parameter relating to said fault detection analysis to a detected fault is determined in the computer. A weighting of said parameter based upon said relationship of said parameter to said detected fault is adjusted in said computer. The fault detection analysis relating to processing of a subsequent workpiece using said adjusted weighting is performed in said computer. On information and belief, Infineon, directly or through one of its Foundry Partners, contracted with Applied Materials and PDF Solutions to use this process to design, develop, or manufacture the '538 Accused Products.

231. Attached hereto as Exhibits T and U, and incorporated by reference herein, are claim charts detailing how each of the '538 Accused Products manufactured using the Applied Materials E3 system and/or the PDF Solution Exensio system by a Infineon Foundry Partner on behalf of Infineon (e.g., TSMC and/or UMC) or Infineon (to the extent that either or both systems are used at Infineon's own manufacturing facilities) satisfies each element of at least claim 1 of the '538 patent, literally or under the doctrine of equivalents.

232. On information and belief, the '538 Accused Products are neither materially changed by subsequent processes nor become trivial and nonessential components of another product.

233. On information and belief, at least as of November 25, 2020, Infineon has induced and continues to induce others, including its suppliers and contract manufacturers, to infringe one or more claims of the '538 patent, including, but not limited to, claim 1, pursuant to 35 U.S.C. § 271(b), by actively encouraging others to import into the United States, and/or make, use, sell, and/or offer to sell in the United States, the '538 Accused Products or products containing the infringing semiconductor components of the '538 Accused Products, by actively inducing others to infringe the '538 patent by making, using, selling, offering for sale, marketing, advertising, and/or importing the Accused Products to their customers for use in downstream products that infringe, or were manufactured using processes that infringe, the '538 patent, and by instructing others to infringe the '538 patent.

234. For example, Infineon actively promotes the sale, use, and importation of the '538 Accused Products in marketing materials, technical specifications, Newsletter4Engineers publication, web pages on its website (e.g., [www.infineon.com](http://www.infineon.com)), press releases, as well as at trade shows (e.g., the Sensor + Test Trade Fair and Mobile World Congress) and through its sales and distribution channels that encourage infringing uses, sales, offers to sell, and importation of the '538 Accused Products. On information and belief, Infineon supplies customers with '538 Accused Products so that they may be used, sold, or offered for sale by those customers. For example, Infineon provides direct sales to original equipment manufacturers and electronic manufacturing service providers. On information and belief, these direct sales include sales to customers in the United States. Infineon additionally provides a wide range of technical support to customers and businesses, including product-specific solutions (*see, e.g.*, <https://www.infineon.com/cms/en/about-infineon/company/contacts/support/>) and

community forums (e.g., <https://www.infineonforums.com/>). Infineon also promotes, publicly on its website, uses of the '538 Accused Products by customers in the United States.

235. On information and belief, Infineon sells or offers for sale the '538 Accused Products to third parties that incorporate the '538 Accused Products into third party products ("the '538 Third Party Products").

236. On information and belief, Infineon assists third parties, directly and/or through intermediaries, in the development and manufacture of the '538 Third Party Products and provides technical support and supports the sales of the '538 Third Party Products.

237. On information and belief, at least as of November 25, 2020, Infineon also has induced and continues to induce third parties with specific intent or willful blindness to import, make, use, sell, and/or offer to sell '538 Third Party Products that include at least one '538 Accused Product fabricated or manufactured using the Applied Materials E3 system and/or the PDF Solution Exensio system and/or similar systems (e.g., with similar technical and functional features) whose make, use, sale, offer for sale, or importation constitutes direct infringement of at least one claim of the '538 patent.

238. On information and belief, the '538 Third Party Products are imported into the United States for use, sale, and/or offer for sale in this District and throughout the United States ("Imported '538 Third Party Products").

239. On information and belief, to the extent any entity other than Infineon, including but not limited to any of Infineon's Foundry Partners or third-party importers, imports the '538 Accused Products and/or Imported '538 Third-Party Products into the United States for or on behalf of Infineon ("Third Party Importer"), Infineon is liable for inducement of infringement by the Third Party Importer. Infineon has encouraged the Third Party Importer to infringe the '538

patent and intended that it do so. This encouragement includes at least ordering or instructing the Third Party Importer to import the '538 Accused Products and/or '538 Third-Party Products into the United States, providing directions and other materials to the Third Party Importer to enable such importation, and/or conditioning the receipt of benefits (included but not limited to payment) to the Third Party Importer on such importation. On information and belief, this behavior has continued since Defendant first became aware of the '538 patent and the infringement thereof.

240. On information and belief, to the extent any entity other than Infineon, including but not limited to any of Infineon's Foundry Partners, uses the patented method to fabricate or manufacture the '538 Accused Products and/or Imported '538 Third-Party Products in the United States for or on behalf of Infineon ("Third Party Manufacturer"), Infineon is liable for inducement of infringement by the Third Party Manufacturer. Infineon has encouraged the Third Party Manufacturer to infringe the '538 patent and intended that it do so. This encouragement includes, without limitation, ordering the '538 Accused Products from the Third Party Manufacturer since Defendant first became aware of the '538 patent and its infringement by the Third Party Manufacturer.

241. Infineon has benefitted and continues to benefit from the importation into the United States of the Imported '538 Third Party Products.

242. Ocean Semiconductor has suffered, and continues to suffer, damages as a result of Infineon's infringement of the '538 patent.

243. Infineon has continued to infringe the '538 patent since at least November 25, 2020, despite being on notice of the '538 patent and its infringement. Infineon has therefore infringed the '538 patent knowingly, willfully, deliberately, and in disregard of Plaintiff's patent

rights since at least November 25, 2020, at least by performing acts of infringement with actual knowledge of its direct and indirect infringement or while remaining willfully blind to the fact of its direct and indirect infringement. As a result of at least this conduct, Plaintiff is entitled to enhanced damages under 35 U.S.C. § 284 and to attorneys' fees and costs under 35 U.S.C. § 285.

244. Ocean Semiconductor reserves the right to modify its infringement theories as discovery progresses in this case. Ocean Semiconductor shall not be estopped or otherwise limited or restricted for purposes of its infringement contentions or its claim constructions by the claim charts that it provides with this Complaint. Ocean Semiconductor intends the claim chart (Exhibits T and U) for the '538 patent to satisfy the notice requirements of Rule 8(a)(2) of the Federal Rule of Civil Procedure. The claim chart is not Ocean Semiconductor's preliminary or final infringement contentions or preliminary or final claim construction positions.

### **RELIEF REQUESTED**

WHEREFORE, Ocean Semiconductor demands judgment for itself and against Infineon as follows:

- A. A judgment that Defendant Infineon has infringed, and continues to infringe, one or more claims of each of the Asserted Patents;
- B. A judgment that Defendant Infineon has induced infringement, and continues to induce infringement, of one or more claims of each of the Asserted Patents;
- C. A judgment that Defendant Infineon has contributed to, and continues to contribute to, the infringement of one or more claims of each of the Asserted Patents;
- D. A judgment awarding Ocean Semiconductor damages to be paid by Defendant Infineon in an amount to be proven at trial adequate to compensate Ocean Semiconductor for

Infineon' past infringement and any continuing or future infringement through the date such judgment is entered, but in no event less than a reasonable royalty for Infineon's infringement;

E. A judgment awarding Ocean Semiconductor treble damages pursuant to 35 U.S.C. § 284 as a result of Defendant Infineon's willfulness;

F. A judgment and order finding that this case is exceptional and awarding Ocean Semiconductor its reasonable attorneys' fees to be paid by Defendant Infineon as provided by 35 U.S.C. § 285;

G. A judgment awarding expenses, costs, and disbursements in this action against Defendant Infineon, including pre-judgment and post-judgment interest; and

H. A judgment awarding Ocean Semiconductor such other relief as the Court may deem just and equitable.

#### **JURY DEMAND**

Pursuant to Federal Rule of Civil Procedure 38(b), Plaintiff hereby demands a trial by jury on all issues so triable.

Dated: December 31, 2020

Respectfully submitted,

By: /s/ William F. McGonigle  
Raymond P. Ausrotas, Esq. (BBO #640315)  
[RAusrotas@arrowoodllp.com](mailto:RAusrotas@arrowoodllp.com)  
William F. McGonigle, Esq. (BBO #569490)  
[wmcgonigle@arrowoodllp.com](mailto:wmcgonigle@arrowoodllp.com)  
ARROWOOD LLP  
10 Post Office Square,  
7th Floor South  
Boston, MA 02109  
T: 617-849-6200

Timothy Devlin (*pro hac vice* forthcoming)  
[tdevlin@devlinlawfirm.com](mailto:tdevlin@devlinlawfirm.com)  
Alex Chan (*pro hac vice* forthcoming)  
[achan@devlinlawfirm.com](mailto:achan@devlinlawfirm.com)  
DEVLIN LAW FIRM LLC  
1526 Gilpin Avenue  
Wilmington, Delaware 19806  
Telephone: (302) 449-9010  
Facsimile: (302) 353-4251

*Attorneys for Plaintiff,  
Ocean Semiconductor LLC*